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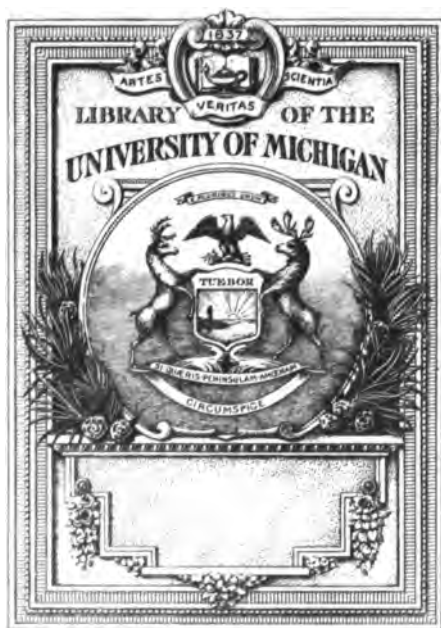
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THE LINCOLN SCHOOL
of TEACHERS COLLEGE

SOME USES OF
SCHOOL ASSEMBLIES

PUBLISHED BY
THE LINCOLN SCHOOL *of* TEACHERS COLLEGE
425 WEST 123RD STREET NEW YORK CITY
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Columbia university. Teachers college
Lincoln school

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FOREWORD

The Lincoln School believes that exchange of ideas about common problems is essential if education is to be redirected so as to meet the needs of modern life. This pamphlet presents a record of certain experiences with school assemblies, rather than a full discussion of the whole question. The five years during which the school has been in operation is too short a time in which to have developed final proof as to the value of the types of exercises outlined herein. It is hoped, however, that this record of experiences will be helpful to others who are working on the same problem. The ideal is one of vital school meetings where pupils learn to share their interesting experiences, to express themselves intelligently, easily, and naturally, and where they grow toward higher standards of comradeship, citizenship, and scholarship through cooperative efforts in school affairs.

W.B.S.

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**SOME USES OF
SCHOOL ASSEMBLIES**

Some Uses of School Assemblies

I. HOW SCHOOL ASSEMBLIES DEVELOP

School gatherings of a democratic nature have been a recognized part of the Lincoln School from its beginning. At first there was no regular time for meeting. Assemblies developed because they met definite needs. When an occasion arose which required a meeting, the assembly was called. These meetings soon became so important a part of the life of the school that a regular weekly period was fixed. This time was set as much to limit the number of assemblies as to secure regularity. As the needs became more and more evident a simple plan for their organization has developed. Assembly programs are arranged by two committees composed of teachers and pupils, one in the elementary school and one in the high school. These committees work informally. School tradition has already established assemblies for certain holidays and celebrations. At Christmas there is a musical program, and in February a patriotic program is planned to develop ideals of citizenship. The exercise at the close of the year in the elementary school consists largely of songs and poems written and recited by pupils. The closing exercise of the high school has varied from programs given entirely by pupils, to those in which an invited speaker gave an address, pupils furnishing the rest of the program. The committee in charge sets the dates and leaves the preparation and the execution of the program to the department or group which has material to present. The contribution to the educational experiences of the pupils through their active participation in programs which they recognize as valuable has been the guide in all planning.

II. VALUES OF ASSEMBLIES

The assemblies given as a summing up of a class-room study serve as a review, a test of knowledge acquired, and they aid in fixing the important facts in the study for the pupils. They give practice in the organization and presentation of material and in quick thinking. They are valuable to the pupil audience in giving useful and interesting facts and in increasing respect for subject matter. They are a unifying influence in the school through showing the pupils that worthwhile and interesting work is being done in all the grades. These assemblies have also proved a real motive in stimulating thorough work in the class room. They have become such a real part of the school life that the pupils want to make their assemblies as good as possible. Therefore they are willing to work hard in gathering material, in making charts, in anticipating possible questions and in getting a command of the subject that will enable them to present it in a finished and scholarly way. This does not mean that an assembly should be used as an objective in acquiring subject matter or selecting topics. The children are eager to work to get a better command of the whole subject because they are going to make an immediate use of their knowledge.

III. TYPES OF ASSEMBLIES

During the first two years of the school the assembly committees kept records of their work and criticized the educational value of each meeting. They developed an outline for five types of assemblies that seemed to meet real needs in the school.

A. *Class Studies Assemblies.*

The majority of assemblies in both the high school and elementary school come from the class room. Some of the best programs of this type given during the year are outlined in brief in the following pages.

1. *A Cross Section of the Ninth Grade Day:* The ninth grade gave an assembly in which they told the high school about the work they were doing. This was suggested by the chairman of the high school assembly committee. He asked the grade on Thursday to give an assembly the following Tuesday. The class chose the pupils to explain the work in each subject. With discussion and suggestion from the class advisor three-minute talks were planned. The program gave the audience an excellent picture of the curriculum of the ninth grade as well as of each speaker's general understanding of his work. A ninth grade pupil presided and members of the class spoke on the following topics:

A Ninth Grade Day—the daily program.

Biology—The rat pest

Physical education—boys

Physical education—girls

The Library

Mathematics—indirect measurement, illustrated with charts

Song by Ninth Grade—the Uninhabited Island

Industrial Arts and Vocational Guidance. Illustrated with demonstrations

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French—given in French
English
Fine Arts
Household Arts and Fine Arts—Illustrated with charts
Household Arts
Social Studies

2. *A High School Poetry Assembly:* A Poetry Assembly was given to the elementary school by members of the twelfth grade English class. It grew out of a study of poetry, particularly the reading of poetry. The twelfth grade English class had begun to develop skill in appreciating verse. They wished to try their power on someone else. The following program was given:

The Charm
Cradle Song
Jane
Mrs. Murphy—From "Jane, Joseph and John" by Ralph Bergengren
Parents—Mary and Maizie Frazier
Mabel Maud Diminish
The Googlewat with the Purple Spot.—From "The Bravest Thing in the World" by Lee Pape
The Raggedy Man—James Whitcomb Riley
The Gardener's Song—From "Sylvie and Bruno" by Lewis Carroll
The Wind and the Moon—George MacDonald

The pupils of the elementary school wrote enthusiastic letters, even going so far as to take a vote on the most popular readings. Lewis Carroll was first with James Whitcomb Riley a close second.

3. *The High School Science Club Assembly:* The science club of junior high school boys gave an assembly describing the work done in their meetings, which are held after school but under the supervision of a science teacher.

Except for the first two talks the points were illustrated by demonstrations. One boy made salt, another performed some simple tests for unknowns, another explained an exhibit arranged to show different kinds of glass blowing. The parts of the wireless receiver were all "school made" and the demonstrator told

the history and cost of each part and invited the audience to come up afterwards and listen through the receiver. The program follows:

- Aim and Organization of the Club
- Snakes—A sample report of the biology division
- A series of chemical experiments
 - Making of salt
 - Unknowns
 - Thermometer and glass blowing
 - Batteries
- Summary of work in chemistry division
- The wireless set and an account of the work done in the wireless division

4. *A Group of Class Studies Assemblies in the Elementary School:* In the elementary school each grade gave one assembly during the year based on their class work. The first grade gave a program of Christina Rossetti poems they had learned. The second grade gave an original Valentine play. The work involved making the theatre itself, the play, costumes, dances, songs, curtains, scenery, and writing invitations. The third and fifth grades gave assemblies describing the studies of fossils, studies they had made as an outgrowth of questions about collections brought in after the summer vacation.

The fourth grade gave a geography assembly giving information about each one of the countries helped by the European Relief Fund. The study for this was made in connection with the school drive for the fund. It served as an introduction to world geography for the fourth grade and interested this group in children of other countries. The third grade was so much interested in the assembly that they made a study of the Central European countries. The study was made by dividing the class into committees, which reported to the whole group. Globes, maps, pictures and some representative materials were used. A trip was taken to see the Czecho-Slovak exhibit at the Bohemian branch of the Public Library.

The sixth grade gave two assemblies in connection with their study of English ballads. Both were original dramatizations. For the first the class rewrote a ballad in a form suitable for acting; for the second they dramatized in ballad form two "Robin Hood" stories.

B. Cooperative Assemblies by Several Grades.

Assemblies based on the curriculum are also given by several classes showing the development of a subject from grade to grade. A special teacher suggests such a topic as "Pottery," and working with the assembly committee a program is outlined on the basis of the work being done in each grade. The preparation of each section is left to one class. The attempt is to plan the program so that each class can make a contribution directly from its daily work. Since these assemblies are expressions of daily work the minimum time is necessary for preparation. Programs given by one class, unless they are plays, are not rehearsed on the stage. The children plan what they want to say and practice in their class, getting its criticisms and suggestions.

These programs present the same kind of material and have the same educational advantages as the class studies assemblies. They are of greater social value both for the audience and performers because children of different ages work together in presenting the development of a subject or project through a number of years. They are an important force in building up school spirit and unity through showing that a number of grades are studying the same subject and each can learn from the other.

1. *Fine Arts:* It is the aim of all the fine arts teaching to show the pupils that art is a fundamental part of life, by having them use every opportunity for real art expression. The class giving the assembly usually arranges the auditorium and stage, although sometimes an older group is chosen to do it for the whole school, as at the Christmas assembly where each class was

represented on the program. First, the materials to be arranged are collected and the class discusses with the teacher the different ways in which the materials look well, meanwhile trying them out. Good spacing, color harmony and practical ways to put up the materials are thought out. Committees are then appointed and all set to work to do their part. The art teacher and class act as their own critics during the hour. Necessary changes are discussed before making them, so that critical judgment has an opportunity to grow through constant exercise.

The high school gave an assembly showing the work of the fine arts department. Pupils from different grades gave talks on these subjects:

Clay as a medium of expression
 Art in stage setting
 The Greek Play
 Work in graphic arts
 School advertising
 Christmas card sale
 Art in the home
 Representation as a helpful means of expression
 Christmas work

The whole school gave the history of pottery in an assembly, each grade contributing the result of any studies they had made on the subject. At the opening of school in the fall the elementary school held an assembly to tell what they knew about the summer collections brought in by different children. This discussion led to the grade studies of fossils and the two assemblies mentioned above.

2. *Elementary School Closing Assembly:* The closing exercises are examples of programs of class work from several grades. The program for 1921 was:

A Joyful Welcome	Schumann
A Spring Round	Hayes
All the Birds	Traditional

SOME USES OF SCHOOL ASSEMBLIES

Original Couplet by first-grade pupils	
The Rollicking Robin Has Come Again.	Larson
May.	MacDonald
A Desert Song (Poem and tune by second grade)	
Original Poems by second-grade children	
Butterflies, Original Poems by third-grade pupils	
Butterflies	Swinburne
My Boat in Summer, by a third-grade pupil	
See the Ships Go Sailing By	French Folksong
In the Sky of Evening	Reinecke
'Tis Raining	Taubert
Original Poems by fifth-grade pupils	
The World Is Young	Liebe
The Postillion	Molloy
The Jolly Riders	Breu
Riding Down Hill on a Bicycle	Beeching
Original Poems by third-grade pupils	
Sea Fever	Masefield
Trade Winds	Masefield
The West Wind	Masefield
My Heart's in the Highlands.	Traditional

3. *A Patriotic Assembly:* The patriotic program for February of 1921 was planned to give the pupils a new idea of love of country. The subject had been discussed in class in connection with the school drive for the European Relief Fund. It developed that the younger pupils thought of love of country and national service only in terms of prowess, of soldiers, and of military deeds of valor. The chairman of the elementary assembly committee wished to make the pupils realize that people might show their love of country through many forms of service. "Love of Country" was selected as the subject for the assembly and each grade teacher was asked to have her class contribute the ideas it could develop from discussions and studies. Discussions in class brought out what the children already knew or thought about the subject. With these as a basis teachers suggested readings and new lines of thought and from them the pupils formulated the final statements that were given in the assembly. Two talks were given by teachers to set the standard and tone for the meeting. If these talks had been given by children so much help would have been necessary that the talks would have been

artificial—a part learned and recited instead of being an account of an original piece of work. The program follows:

WHAT LOVE OF COUNTRY MEANS

Song — America	
What Love of Country Meant to Washington and Lincoln—A Teacher	
Song — Our Flag	
My Grandmother's Personal Recollection of Lincoln .	Charlotte
Poem—My Captain	Thalia
What Love of Country Means:	
To Mr. Herbert Hoover	A Teacher
To Miss Jane Addams	Helen
To "A Foreigner"	Billy and Janet
One Who Loves His Country	Second Grade
What Love of Country Means to Us	Sixth Grade
Song — O God of Hosts	The School

4. *A Food Assembly:* This assembly was the outcome of a study of food values started in the sixth grade in household arts. The plan had been to give the assembly in the spring, but the children were so much interested in giving a good program that they wanted to go into the subject more thoroughly. They were anxious to have their information useful for the whole school in buying school lunches. If they gave the assembly in the fall they felt it would be more effective than if it came just before school closed in the spring. Therefore they went on with the food study in the fall when they returned to school. Charts were used to illustrate the talks on the selection of foods. These charts were excellent examples of the work in lettering the class had done in fine arts and the way the work of that department carries over into other work of the school. "Food Saving and Sharing"¹ was the chief text used in the study. The facts and figures for the charts used in the assembly were taken largely from "Dietetics for High Schools."² A table showed food allowances in calories for children of different ages, and for different kinds

¹Tappen, Eva March. U. S. Dept. of Agriculture and Bur. of Ed. 1918.

²Willard, Florence, and Gillett, L. H. 1920.

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of work. The following information was prepared and distributed to the audience at the end of the assembly:

Food Facts Worth Remembering

- Food—1. Supplies energy for work and to keep body warm.
 2. Builds and rebuilds tissues.
 3. Regulates the body.
 4. Encourages growth.

What foods and how much should one eat?

1. Nearly all foods supply energy.
 Some supply much more fuel than others.
 (See exhibit of 100-calorie portions.)
2. These foods are noteworthy as builders of tissue: milk, eggs, dried beans, peas, oatmeal, whole wheat, lean meat, fish, cheese.
3. Foods that regulate the organs of the body: milk, green vegetables, fruits, eggs.
4. Foods that stimulate growth: milk, butter, egg yolk, leafy vegetables, fruits, whole grains.

The following foods should be eaten frequently: milk, whole grains, cheese, eggs, green vegetables, dried beans and peas, and dried fruits.

Needs of the Body Under Varying Conditions

	FUEL VALUE IN CALORIES
Man doing heavy muscular work	4,150
“ “ moderately active muscular work	3,400
“ at sedentary work	2,700
Woman doing moderately active work	2,700
Man without muscular exercise or woman at light work	2,450

Food Requirement During Growth

6 years—9 years	1,400—2,000 calories
10 “—13 “	1,800—2,200 “
14 “—17 “ girls	2,200—2,600 “
“ “ boys	2,500—3,000 “

The class also posted on the lunch-room walls charts showing caloric values of all the common foods.

The topics of the food assembly program were:

Introduction—Teacher

Do you choose luncheons that will make you strong and fit?

- Why does the lunch-room manager object to boiled rice, baked potato, a roll and a chocolate cornstarch pudding as a luncheon combination?
- Why does she urge a green vegetable?
- What magic is there in drinking milk?
- What is the real objection to eating candy between meals?
- How can one be sure that he is eating sufficient food of the proper sort?
- Animal Nutrition—Senior High School Boy—Biology Student.
- What does the horticulturist do in feeding plants?
- What care does the cattle raiser take in feeding animals?
- Human Nutrition—Five Seventh-Grade Pupils.
- What does food do for the body?
- Explanation of 100-calorie portions as measures of energy.
- Examples.
- Another duty of foods, tissue building and repair. Examples.
- Regulating foods.
- Growth-promoting vitamins. Examples.
- How scientists discover new facts.
- Foods that should be eaten freely.
- Good choices (charts).
- How much food do we need?—Teacher.
- The respiration calorimeter.
- Needs for different ages and weights of individuals. Charts.
- What going into training means—Physical-Education Teacher.
- Visit to a nutrition clinic—Seventh-Grade Pupil.
- What are organizations in this country doing to better the health of the nation through wiser eating?
- Nutrition centers—Seventh-Grade Pupil.

This assembly was especially interesting to the pupils and the lunch-room manager reported a marked improvement in the selection of luncheons. The household arts teacher has found that the information given in assemblies can be counted on as an introduction to subjects in starting class studies.

The assembly was also followed up by selling weight cards for two cents a piece in the lunch room. All the children who found they were underweight kept their records through several months, weighing themselves at stated intervals.

5. *A Pottery Assembly:* Work with clay and a study of pottery was going on in six different grades. An assembly could be made to give a general background to the work. This outline was made by the elementary assembly committee:

- First grade: Showing plates and telling how they made them.
- Third grade: Evolution of primitive pottery making.

Fourth grade: Brief history of discovery and use of glazing. Story of Palissy, the Potter.

Fifth grade: Indian pottery making.

Sixth grade: Modern pottery industry.

Ninth grade: Contributions of different peoples of the world to the art.

Topics were assigned because these grades were doing classroom work directly concerned with them. The first-grade children made plates for their playhouse. A circular pattern was given them and they built the plates of green clay by the coiling process. The teacher showed them examples of peasant pottery of different sorts and each child then sketched a design for his plate. After criticism and suggestions from the fine arts teacher they painted their own designs on the plates with underglaze. A transparent glaze was put over this and the plates were finished with one firing. Some of the children in the grade showed these plates at the assembly and the peasant examples that had inspired their designs and told how the plates had been made. The second grade had learned something about primitive pottery in their study of primitive peoples. These children told about their work.

The fifth-grade pupils had been studying the history of the early settlers and their industries. They asked the fine arts teacher to help them make bowls as an outgrowth of this study. She planned a study of Indian designs and shapes. This included observation and sketching in museums, and learning the symbolism of the units of Indian design. The emphasis was on art values, especially the use of symbolism, light and shade. The pupils made original designs for shapes and decoration for Indian bowls and carried them out by the Indian process of coiling. They showed their bowls and samples of Indian designs and pottery to the assembly.

The fourth grade had been making a study of the age of exploration and discoveries. The fine arts teacher suggested that the class make a study of Mexican blue and Spanish pottery. This was carried out as the Indian study was in the fifth grade.

They showed their bowls and examples of pottery and one pupil told the story of Palissy the Potter and his wanderings in search of glazes.

The sixth grade had made a study of the pottery industry of to-day with the industrial arts teacher. They had visited a factory and had done some pouring and moulding. In fine arts they had learned something about modern designing and decoration and discovered that art is necessary even in factory work. Members of the class told about their trip and the work they had done.

The ninth grade gave the intellectual and historical background for the program. One pupil told some of the interesting things about Oriental pottery and explained the differences between Korean, Chinese, and Japanese examples. Another gave the history of the art, starting from Peruvian relics, and its growth and development by trade shown by maps. Another told about the industry among the ancient Greeks; a fourth about Persian pottery, and a fifth about European pottery, explaining the history and influences of a number of examples. All these children had actual examples, many of them beautiful originals loaned for the occasion and charts they had drawn from examples in the museum.

A dramatic element was given the program by arranging a stage background of three tableaux of pottery making: an Indian worked without a wheel by coiling; a Persian coiled on a primitive stone wheel; and a mediæval boy held the center of the stage sitting on a high stool working with a "kick wheel." The arrangement of the tableaux, the costumes, and properties were worked out by art classes with children of different grades chosen to pose. The details were as historically correct as seemed compatible with simplicity and the powers of the children.

C. Current Interest Assemblies.

Assemblies are held for discussion of current problems, school interests, or for the celebration of holidays. Occasionally the

whole school gathers for one of these meetings; more often they are held by the elementary and high schools separately. Assemblies are used as the medium for getting school cooperation for campaigns and for giving the background for keeping up an intelligent patriotism. The elementary and high school councils use the assembly to build up the school ideals of self-government, and for "town meetings." The assemblies furnish machinery by which the pupils can themselves take care of the larger intellectual and social relationship of school life. Pupils make announcements of inter-school activities and engage in a discussion of school problems.

In the elementary school the suggestions for these usually come from the committee or from the teacher advisor to the council. The assembly on "Love of Country" is one of this type planned to give the little children a new conception of heroism. In the high school these meetings are usually initiated directly by the student members of the council. They play an important part in the high school's management of its school activities. The constitution of its cooperative body, the Student Council, was worked out by discussions in "town meetings" that went on for most of one winter. Assemblies are always used as the medium for deciding any question that requires the vote of the whole student body. The high school awards honor insignia to students who excell in scholarship, athletics, or citizenship. The idea originated with the students and has been worked out by them. The standard and the qualities that should constitute citizenship and the method of selection for the awards were decided by discussions in assemblies.

1. *Student Council Assemblies:* During the past year the high school pupils have conducted three student council meetings in assembly. At the first held, early in the fall, the committees of the council reported on their plans for the year; a twelfth-grade pupil acted as chairman.

TYPES OF ASSEMBLIES

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The following program was given:

The Lost and Found Dept.	Fred
The Standing Committees	Helen
Library	
Luncheon	
Bulletin Board	
Fire Regulations	Teacher
Committee on Standards	Frederica
Enforcement of Standards	Gilbert
Committee on Enforcement of Standards	George

A second assembly of this type was held to discuss and decide upon the following matters:

Announcements

Motion to have editor and business Manager of "Lincoln Lore" appointed in the spring for the coming year

Amendment of constitution, Art. 3., Sec. 1 (To have the chairman elected by the students instead of appointed by the teachers)

Insignia

Discussion of qualities making up good citizenship

Ranking of Athletics

A third assembly of this type was held to discuss plans for the school paper. The high school English teacher talked on "What we are trying to do and how we are doing it" and the business manager, a student, told about his work and plans.

The elementary pupils have fewer assemblies of this type. Stimulated by the teachers who felt that the pupils needed to think of the elementary council more as their executive and less as a disciplinary body two elementary council meetings have been held in assembly. One was held early in the fall when the constitution and council laws were read and the council members answered questions from the floor. Another was held later in the year to discuss statements written by each grade about the value and place of the elementary council. The chairman of the council, a sixth-grade pupil elected by the council members, presided at both these meetings.

2. *Public Events Assemblies:* The high school has had eight assemblies of this type during the past year. A political mass

meeting with campaign speeches for each political party made by the children; a Thanksgiving program; a thrift program; a report on the European relief fund drive; a debate: "Resolved that an increase from a five-cent to a seven-cent fare is necessary for the New York subway"; three Christmas programs, one musical, one play and a report of the Christmas activities carried on by the high school.

3. *The Assembly as a Means of Planning Activities:* The elementary assembly has become the center for planning and organizing the Christmas activities for the school. These include gifts and entertainments for charitable institutions in the city as well as exercises and gifts within the school. Mothers of elementary school pupils were asked to investigate and report on institutions in the neighborhood that might be helped. The tentative plans made on the basis of these reports were discussed in assembly, and announcements made of each grade's plans for contributions. In this way it was possible for the whole school to share the same Christmas activities instead of each grade making its own isolated contribution. This larger method of working has distinct advantages. It increases school spirit and Christmas spirit by giving a chance for all to work together and it enables the children to do more and better work than is possible when each grade is working alone. The children made gifts and repaired toys they brought from home for two nurseries and made gifts and gave their Christmas entertainments for an old people's home. The following schedule shows how the work centered around assemblies both in its preparation and in final expression. A schedule of the Christmas activities of 1920 follows:

Elementary assembly to plan Christmas activities.

Final rehearsal of Christmas music by elementary school in assembly.

The Christmas play "The Bravest Thing in the World," by Lee Pape, given for the old people who were brought to the school in the bus.

Christmas play for grades 1, 3, 5, 7, 9, 11.

Christmas play for grades 2, 4, 6, 8, 10, 12.

Christmas carols by the high school chorus and the children in the fifth and sixth grades at The Baptist Old People's Home.

A committee consisting of one mother and one child from each of the grades of the elementary school met in the gymnasium to pack and distribute the gifts. A committee composed of the twenty chairmen inspected, packed, and delivered the stockings filled by the high school students.

Christmas assembly for the elementary school.

Christmas assembly for the high school.

Scout Fair for the whole school.

D. *Programs by Artists and Specialists.*

A fourth type of assembly is the program given by an outsider or a talk by a teacher on some special topic. These play a much smaller part in the Lincoln School than in most schools. In spite of unusual opportunities outside entertainment is not furnished the children unless the subject matter is in some way connected with work going on in the school or unless the topic will be of immediate value in giving a new direction to some phase of school life. Most of these programs are musical. Only persons who are real artists in their field are invited to give programs. In this way the highest standards are set for the children and they are led to appreciate the best both in selection and technique. Preparation in music periods arouses interest in the coming program and gives the intellectual background for understanding and judging it. Whenever possible, programs are arranged that present some musical phase of studies that are in progress in the class room. The program of Czech folk-songs illustrates the position such an entertainment may take. For some weeks previous to this event classes had been learning about Central Europe; the history, arts, and industries of the Czechs particularly receiving their attention. Art and hand-work classes had been making decorative objects with Czech motifs in design and color. An opportunity to secure a singer who was both a native Czech and an artist was accepted and the program was carefully planned as to content. Only folk-songs, sung in the native language, were used, and each music class, during the week preceding the performance, was given rhythmic and

melodic examples and an opportunity was made for questions. Much interest was aroused by the costume worn by the singer. It was a beautiful holiday dress, authentic in design and workmanship.

Similar preparation in music periods is given for all programs. Interests aroused by the concerts are followed afterwards by discussion and study. Three accomplished violinists have also given programs this winter. The programs were available because of some personal connection of a teacher or pupil in the school with the artist. All schools have unrealized possibilities for arranging this type of assembly.

The European Relief Fund Drive was so successful that its director consented to come to the school to tell about the relief work and conditions in the Central European countries. Even in such programs as this the educational character of the exercise is kept in mind. Time is always saved at the end of the program for questions from the children and interests roused by talks are followed by further study and discussion in the class rooms. Mr. Hoover's talk was part of the large unit of work that went on during the year in connection with the devastated countries of Central Europe, just as was the recital of Czech songs.

The following account appeared in the school paper, written by a high school pupil after a Lincoln assembly where a guest spoke:

LINCOLN'S BIRTHDAY

Lincoln's birthday, of all days, is the day to be celebrated in the Lincoln School. The assembly of February 12th was up to all expectations. In fact in the opinion of many it was the most inspiring assembly of the year.

A few carefully chosen poems were read by some of the members of the eleventh grade, with great feeling for the sentiments expressed in them. Best of all, however, Mr. George Grey Barnard, the well-known sculptor who made the large statue of Abraham Lincoln which was so much talked of a few years ago, spoke of the great President. He told of the character of Lincoln and said that all our lives, especially the lives of us who come to the Lincoln School, should be dedicated to his ideals.

We had with us also a commission of Chinese educators who are visiting

the schools of this country. The chairman of the commission interpreted Mr. Barnard's talk to his friends in Chinese.

There probably was not a single person present in the assembly room that morning who did not come away with a clearer understanding of Lincoln and a desire to do his best to be like him,

E. *Music Assemblies for Practice.*

The fifth type of assembly is the music rehearsal. These large gatherings play an important part in building school spirit as well as in stimulating interest and freedom of expression for music. Chorus singing gives a spirit of unity and group consciousness in a positive and joyous form. But opportunities to sing together are never made an end in themselves. They occur as necessary preparation for making a musical contribution to some program. The intellectual value of the work is always recognized by teaching music that is appropriate in sentiment and in origin and by encouraging individuals and groups to make original contributions for special occasions.

Assembly rehearsals for the musical part of special assemblies are arranged as the material in smaller groups comes to the point in preparation where larger meetings seem advantageous. The following Christmas programs were prepared in these practice assemblies:

CHRISTMAS ASSEMBLY FOR ELEMENTARY SCHOOL

In Another Land and Time	Eleanor Smith
Why Do Bells for Christmas Ring	Frederick Rool
(first, second, and third grades)	
Ye Shepherds, Arise	Reinecke
Come All ye Shepherds	Old Bohemian Carol
Silent Night, Holy Night	Gruber
(fifth and sixth grades)	
The Christmas Story	
(third and fourth grades)	
The Hallowed Story	Ricordi
(fourth, fifth and sixth grades)	
O Come, Little Children	Folksong

CHRISTMAS ASSEMBLY FOR THE HIGH SCHOOL

Three Carols

Silent Night, Holy Night	Gruber
(Chorus and orchestra)	

SOME USES OF SCHOOL ASSEMBLIES

Ye Shepherds, Arise	Reinecke
(sopranos and altos)	
When the Christ Was Born	Reinecke
(canon for treble voices)	
Musical Narrative	Ricordi
The Hallowed Story	
(sopranos and altos)	
The Christmas Story	
(third and fourth grades)	
Chorus for Christmas Oratorio	Saint Saens
Praise Ye the Lord of Hosts	
(chorus)	

These two programs are the assemblies referred to in the schedule of Christmas Activities given above.

Music assemblies for practice are used for bringing to the minds of individuals and grades a consciousness of responsibilities in building a program. The first rehearsals are in the nature of try-outs, where classes who wish to present their songs may judge of their stage in preparation, of points requiring improvement, of their sureness of memory and of technical matters that arise in tone and diction. Only suggestive criticisms are asked for at these times. Later, when small groups meet, their whole performance is put before them and constructive criticism stimulated. This procedure has proved successful in developing group consciousness. It keeps before the children the fact that the assembly is their own, and that it is an opportunity to give pleasure to the audience. If each grade prepared its part in the privacy of the class room, and presented the results only at the final performance, there would be little opportunity for the healthy and normal rivalry which exists. These assembly rehearsals also give an opportunity to show the importance of such technical points as accuracy, perfect attack, and concentrated attention to the leader, and they reach the valuable social lesson that the audience has its part to perform in learning to listen attentively, intelligently, and courteously.

IV. DETAILED REPORTS OF ASSEMBLIES

Seven accounts of assemblies are given. Their choice has been partly dictated by the number of stenographic reports available. The high school has made fewer of these records than the elementary school; hence the greater number of examples from the latter assemblies.

The "Valentine" and "Christopher Columbus" plays are typical examples of original programs where the conscious aim for the children is literary and artistic. Here as elsewhere the subject and preparation are part of a class-room study and are not regarded as extra curriculum material. The educational value of every part of the preparation is recognized. Necessary note taking and writing are used as exercises in writing, spelling, and composition. Pupils make purchases and keep the accounts if purchases involve buying. The preparation for these two assemblies shows the way dramatization is used for English work. The letters of thanks are also school work.

The program on fossils and the high-school science assemblies are examples of the pupils' own expressions of their class work. Their accounts are stenographic reports taken in assembly and corrected by the pupils afterwards. The short paragraph at the end of the fossil program gives in the pupils' own words the way such assemblies develop as group work. Both programs are typical of the science curriculum of the school. The principles the school tries to carry out in the way the children study also apply to the subject matter they study. The two library assemblies are included because they illustrate the way a library can be made to function in the school. The music assembly is an account in the pupils' own words of an interesting experi-

SOME USES OF SCHOOL ASSEMBLIES

ment in making musical expression and appreciation available for everyone.

A. A Valentine Play.

Last fall when the second-grade children were working on some puppet theatres, one of the boys suggested that the children make a large theater, large enough for them to be the actors. This idea was kept in mind until a good opportunity presented itself for carrying it out. After the Christmas holidays were over it seemed to the teacher to be a splendid piece of cooperative work for the whole class to engage in, so plans were made in class discussion for the making of the theater itself, a play, costumes, dances, songs, curtains, scenery, invitations, etc.

The size of the theater was planned first. It was determined by the size of the cloth the pupils had for a curtain. They decided upon beaver board as a suitable material for the sides and back. It was to be 5 feet 8 inches square, and was to be held together with braces that could be taken off so that the theater could be folded and put away when not in use. The industrial arts teacher helped the children plan and build the theater. The outside was painted a cream color to match the woodwork of the room. Two of the boys volunteered to hem the curtains. This they did and also learned how to fasten the strings so that the curtains could be operated from one side only. This was their own suggestion, but help was secured in finding out how it should be done.

The scenery for the different acts was painted by two of the children. Designing this scenery was a class problem in art and the two best designs were selected. It was done on large sheets of unprinted newspaper with fresco paints. The large sheets of paper were fastened to the sides of the theater with thumb tacks. The scenery had to be changed after the first act. The first act was in the fairy palace, the second and third in a little girl's garden.

The teacher had expected that the children would have to search through their books for a good play but the day that the theater was started one of the little girls said she was going to make up a valentine play. The one she started was trivial, her idea being that valentines are merely comical affairs. Her plot wasn't clever enough to carry out. The teacher suggested that since most valentines were messages of love, she might have some one in the play receive a lovely message. Her eyes lighted up at once. "A Fairy Wand," she exclaimed. A little group of pupils sat down at once and made up the plot, each one suggesting and even acting out parts as he suggested them. The teacher wrote the first two acts as the children dictated. The third act was written by different individuals of the little group and the best one was chosen and corrected for use.

The verse for the valentine was composed and dictated by the same little group. This group worked three thirty-minute periods with the teacher on the writing of the play. The leader of the group selected the children for the different characters till everyone had a part. She interviewed each one to see if he wished to take the part. Mother Goose pictures by Jessie Wilcox Smith were studied for suggestions for costumes. Very few new ones were made as many costumes were already available in the school. To make pantalettes, ruffles were sewed to pajamas. Smocks for the boys were made kimono style, laced up the front at the neck with black cord. The children did as much of the sewing as they could—the long seams were run on the machine, but everyone did something toward his costume either in selecting or making. The following Mother Goose Songs were learned in the music periods:

"Mistress Mary," "Simple Simon," "Humpty Dumpty," "Goosey, Goosey, Gander," "Six Little Mice."

The fairy dance was original—it was worked out by the children and was suggested by the music. The music changed from

quiet to lively quick steps and back again—the quiet part was danced by the good fairies, the lively part by the elves—the fairies changing as the music changed. The elves dropped down as the fairies awoke.

There were three rehearsals in the children's class room, and two rehearsals in the auditorium before the final performance. The children were constantly giving suggestions for improvements and several showed splendid adaptability in taking on another's parts in emergencies.

After the play was over and it was discussed with the teacher, the children were led to realize that many people had contributed to their success, so notes were written to the various teachers to thank them for their assistance. Some of their letters are given here.

DEAR MISS—:

The play was nice and one reason why is because you helped us so much with the scenery, and gave us so many suggestions.

EDITH.

DEAR MISS—:

Thank you very much for the suggestions you gave us. I think they helped us very much. Did you see the play? If you did, did you like it?

Love from,

MARIANNE.

DEAR MISS—:

Thank you for helping us with the costumes for the play. Thank you for suggestions. Thank you for stitching my costume on the sewing machine.

ROSECRANS.

Of the many values derived through such a piece of work, the greatest seemed to be the growth in cooperative spirit. The day of the performance the subordination of self in the interest of the whole was quite marked. Each one did his best to make the play a success.

THE VALENTINE

The fairies in their palace,
Are happy all the day,
A sad little girl in the garden,
Has no one there to play.

But in this Fairy Valentine,
We'll give her a magic wand,
So she shall have her playmates
Of whom she's very fond.

EDITH, EILEEN, VIRGINIA.

A FAIRY VALENTINE

ACT I

Place: In a fairy palace.

Characters: Fairies, fairy king and queen, elves and messenger.

Dance: The fairy dance.

Fairy Queen: Your Majesty the King, will you write a valentine to a good little girl with the loveliest message you can send her? I will give a magic wand to go with the valentine. Page, take this valentine to the good little girl.

ACT II

Place: In the little girl's garden.

Characters: Little girl, page.

Little Girl: Oh, I'm getting tired of my knitting. Nobody has sent me any valentines. Oh, I wish I had some playmates. Nobody lives near me and I am so lonely.

[Little girl silent a minute. Suddenly a sound is heard. She turns and sees a page coming with a large valentine. He hands it to her and disappears.]

Page: This valentine is from the fairy king and queen.

Girl (opening it): Oh, a stick, just a piece of paper. No, it's a magic wand. I've often heard of magic wands in fairy stories, but I've never seen one in reality before. [Silence a minute.] Shall I ask it to bring me some playmates? I know what I'll say. Magic wand, will you bring me some playmates? I am very lonesome.

[She waits a moment then hears a horn in the distance.]

Girl: Here they come now. [She runs to meet them.]

ACT III

Mother Goose's children in the garden.

Little Boy Blue: We have come to play with you.

Little Girl: Oh, I am so glad because I was so lonely.

Little Bo-Peep: What shall we play?

Little Girl: I'll be the mother and Little Boy Blue you be daddy.

Little Miss Muffet: No, there are too many of us. Let's dance and sing for the little girl.

[They dance and sing.]

Little Boy Blue: I will give you my horn and whenever you blow it, I will come.

Girl: Thank you. I am so glad because I shall never be lonely again.

[Mother Goose comes in.]

Mother Goose: How did you come over here?

Simple Simon: The little girl's valentine had a magic wand and she wished for playmates, so we came to play with her.

Mother Goose: Did you have a nice time?

Humpty Dumpty: Oh, we had a lovely time. We sang and danced.

Mother Goose: It's time for us to go home now. It's getting dark.

Mistress Mary: Let us sing once more before we go home.

Mother Goose: Yes, you may sing one more song.

Jack and Jill: Let us sing our song.

[They sing.]

Mother Goose's children: Good-bye.

Little Girl: Good-bye. Be sure to come again when I blow the horn.

EDITH, VIRGINIA, HOWLAND, HARRIS, EILEEN, NICHOLAS.

B. *A Study of Fossils.*

Before school closed in the spring of 1920 an assembly of the whole school was held to make plans for summer work. Different kinds of studies and collections were suggested. The science teachers told how to collect, take care of, or preserve specimens, and listed reference books for help in studying.

The third-grade study of fossils that grew out of summer collections was made the basis of a winter assembly. The account shows the organization and methods of the study as well as the information the children acquired. The story was told by the children in their own words. Who were to speak and the points to be made were decided upon by class discussion. Everyone in the third-grade class helped in some way in this assembly. Some people talked, some drew, some had schemes for showing things, such as the scheme for representing rock in layers, some showed how they made experiments, and some helped other people to say things just right, and everyone helped to make the plan of telling the story.

When the pupils returned to their room from the assembly each child wrote what he had given as nearly as he could remember in order that the class might have a complete record of the fossil study for their nature-study books. Their account follows:

You all remember the Assembly exercise we had last fall on the summer exhibit. David and I told you a little about our fossils, but we did not know

very much about them. So we said we would study about them, and have an Assembly exercise to tell you more about them.

After we saw Jane's and David's fossils we were interested in their fossils so we have made a study and now we can tell you about fossils.

The first thing in our study was to go to the Museum to see fossils. When we got there we did not see what we expected to. First we had thought that fossils were only prints of objects, but we found out that they are sometimes real objects that have become stone. There were fossils of whole skeletons, bones, leaves and fishes.

At the Museum we thought that the rock in which the object was pressed must have once been soft because if the rock was always hard the object could not have been pressed in.

We also thought that the object must have been covered or it would have worn away. Some of the fossils are of animals that lived thousands and thousands of years ago and they do not live now, and yet the fossils are almost perfect.

We also found out that the fossil itself was stone and we wondered how it became stone. Our class had some fossils and at first we thought they were only prints but afterwards we noticed they were really raised up a little and hard like stone.

When we came home from the Museum the teacher told us that fossils were only made in a certain kind of rock. Then she showed us a picture of some of that kind of rock. It was in a stone quarry. We saw that the rock was in beds or layers of rock. So we called it layer rock. We thought that if we knew how this rock was made it might help us to answer the big question, "How are fossils made?"

Some children in our room said they had seen wind carry earth and drop it in layers. Then the teacher put some earth in a bottle and then she filled the bottle part way with water. Then she shook the bottle and the water carried the earth, but when she stopped shaking the bottle the earth began to sink; the heaviest earth sank first, then the fine, and last of all the very, very finest. Then we began to see how layers of earth might have been formed by water. The teacher told us the name for the earth the water drops is "sediment."

We wondered how or if in many years the layers of earth could become stone.

We asked Mr. — to come and help us to answer the question, "Could layers of earth ever change to stone?" With him he brought some very fine cement. He put it in a little pan and poured some water over it. In a few days we took it out of the pan and it was just as hard as stone. After that the teacher told us that while water was going along it carried fine crushed stone and it mixed with the sediment. Then we mixed some clay with some very finely ground stone and poured some water over it, and it became like stone. After that we mixed some sand the same way and it became like stone. Layers made by wind could not become stone because there was no water.

Then we thought of ways that an object might have been caught between layers of earth before it became stone. These are ways we thought of. Once there was a swamp. In it grew grass, leaves and ferns. After a good many years floods and rains came and brought earth and covered the swamp. Then after hundreds of years the grass and leaves became fossils and the sedi-

ment got hard. This is another way someone thought of. Once upon a time on the seashore in summer when it was low tide an animal went too far out in the wet sand and got caught. Then the tide came up and the animal was drowned. The water came again and again and brought earth and covered the animal. Then after many years the sediment became hard like stone. The ocean then went away. The animal became a fossil between layers of stone.

Another of the questions that we wanted answered was, "How does an object such as a leaf or bone which is caught between two layers of sediment become stoner?" So we asked Mr. — to come up to our classroom to try to help us to answer the question. When he came he drew a picture like this. He drew two hills opposite each other. In between the two hills was a swamp. For a long time the water had been washing down the hills and the water had been draining through the swamp and bringing sediment. After a time some people wanted to build a road across the swamp. When the people were digging out the swamp they came across a log. One end of the log was gnawed by beavers. Mr. — wanted to bring the end of the log to school. He asked a farmer if he would lend him a saw to cut that end off. After they had sawed a little while the farmer said, "Here, I have to use that saw for cutting wood. Will you promise to put the saw in as good a condition again if I let you finish cutting the log?" Mr. — said he would but the sawing was a hard job because the log was filled with particles of sand. While the log was in the swamp it gradually decayed. Sand particles gradually took the place of the decayed wood. Water had been washing down the hill and had brought the sand and washed it into the log. When Mr. — tried to cut it he found he was cutting sand. The log was on the way to being petrified. That tells a little of the way objects become fossilized. Ground rock in the water takes the place of decaying particles in the object.

Mr. — showed us some lantern slides of petrified wood. It is made almost in the same way that fossils are made.

C. *A Columbus Play.*

Since the children of the fourth grade already had a suitable background and interest in the early discoveries from their third-grade history, the study of discovery and exploration was continued. The following rather detailed account of the original play that grew out of the study and its preparation is entirely the work of the children. Some parts were written by individual pupils while others were dictated by the class. It was all done in school time and was recognized as lessons as much as if it had been labelled history, art or spelling. The study indicates the endless opportunities there are for drill and departmental cooperation in such projects when they are carefully planned and

directed. The account of the play was mimeographed and made into a booklet by the pupils.

The Booklet: After our Columbus Play was printed somebody said: "We must have a cover for it." Then Pauline said: "Oh yes, it must have Columbus's Ship on it." Then Susan offered to make the design for the cover. After she had made several designs the class voted on which they wanted. David said that he could cut the design out of a linoleum block so we could print it. Then William, Page, and David printed the cover.

How We Became Interested in Making our Columbus Play.—The fourth grade had been studying about Marco Polo, Prince Henry, and Columbus. The reason we were so interested in Columbus was because he was always trying to get to the "Far East" and nobody but himself believed he could. When we had studied about Columbus awhile, we thought other people would like to know about Columbus too. We thought the other people could have fun seeing a play and we could have fun writing and playing one.

MAUD and SARAH.

How We Wrote It.—We wrote the first act of the play all together. Every time anybody had a suggestion, our teacher wrote it down on the blackboard and after we had made lots of changes we got the first act finished, but we thought it took too much time. It was then decided that we divide up into committees and each have a different act to write, so the class said what acts they needed and then which they wanted to work on; at last we got the whole play finished.

FLORENCE.

The books we used were as follows:

"Columbus' Diary"	By Himself
"How a Weaver's Son Found a New World"	Lida Lee Tall and E. F. Barnard
"Life of Columbus"	Clement Markham
"The World's Discoverers"	William Henry Johnson
"Explorers and Settlers"	Century Historical Readers
"Our Ancestors in Europe"	Jennie Hall
"Source Readers in American History No. 1"	Hart
"Founders of Our Country"	Coe

We saw a moving-picture film of Columbus at the Court of Spain. We went to the Metropolitan Museum of Art to look at some books showing pictures of the costumes the people used in Spain in the 15th century. We got some pictures of Columbus, of his ships, and of the landing, from the New York Public Library.

ARTHUR.

The Costumes.—For the costumes in our Columbus play we went to the Metropolitan Museum with the fine arts teacher. We had a room where we saw three books with pictures of Spanish and Italian people. We copied

the pictures as well as we could. Another time we saw dolls dressed up as queens and ladies of the 15th century. After a few days we were asked to bring anything we could for costumes. We put the things we had brought on the table and each one picked out what he thought would be best for his part. The fine arts teacher and the class criticized them. The king wore a jeweled robe of red cloth, and over his shoulders a black robe with a gold border, and a gold crown with jewels. It made him look very grand. The queen wore an American Beauty velvet robe with a deep lace collar and strings of pearls, and a jeweled crown. She looked like a true queen. The courtier's costume was of blue, with a white vest and a blue hat with a red plume. Columbus as a boy, wore red bloomers and a blue shirt. Columbus as a man, had the same, with a black cape and a black tam. The sailors had sweaters and knickerbockers and red bandanas around their heads, and bright colored sashes like real sailors. The Indians wore real Indian suits.

PAULINE, SOPHIE, and ELIZABETH.

After we finished writing the play we thought it would make the play more like Spanish people to have a Spanish gypsy dance in it. The physical training teacher taught us a gypsy dance for the play. The music teacher said he had a good song for the sailors. The name of it was "The Four Jolly Sailormen." So he taught us this song:

FOUR JOLLY SAILORMEN

We're four jolly Sailormen come up from the sea,
(There's Luigi, Antonio, Giovanni and me;)
Enjoyin' our liberty in fairly good health,
(Meanin' Luigi, Antonio, Giovanni and self.)

Our ship ain't no saucy bird as flies o'er the foam,
But a top-heavy caravel what's rolled her way home;
What's roll'd her way home again from the South Chiny Sea,
(With Luigi, Antonio, Giovanni and me.)

ADAPTED FROM KIPLING.

The Court Scene.—We went down to the assembly room with our teacher and took the gorgeous cherry satin Florence had brought and pinned it on the back ground of blue. Then we took two chairs and covered them with another piece of the same color. Above, we hung a lovely brown hanging with little looking glasses as a border design on it. At the bottom of the throne we placed a blue hanging with flowers of yellow embroidered on it, and also little looking glasses on it. When the court scene was finished it looked very attractive indeed.

Chairman (SUSAN).

ACT I

The first scene of the Columbus play was to make you think Columbus wanted to explore. He wanted to go to the Far East. When the scene opens Columbus is sitting on a wooden post. He is reading Marco Polo's book.

He closes it and looks far out at sea. His brother comes in and wants him to play tag. Columbus is just getting off the post when he sees a ship just coming in and, of course, he runs and watches it unload. Then some sailors come in singing a jolly sailor song as they unload the ship.

BARBARA.

ACT II

This scene takes place in the court of King Ferdinand and Queen Isabella of Spain. There was a large piece of cherry satin nearly as large as a sheet used for a background. It had a golden-colored tapestry embroidered in dark blue over the top. It was embroidered in flower stalks and the flowers were little mirrors embroidered about the edge. Below the king and queen was a navy blue tapestry embroidered in light brown color. A cherry satin covered two chairs for the thrones. They really looked more like thrones than like chairs. There were three ladies-in-waiting that stood by the queen to add beauty to the court. The king and queen's apparel added too. When it was done it looked quite like a real court.

SARAH.

ACT III

This scene takes place in the cabin of the *Santa Maria*. Columbus is writing his diary. It is night. He is sitting at a small low table. The only light is a short, white tallow candle. There is a dark background that goes beautifully with the scene.

SARAH.

ACT IV

This scene takes place on the island of San Salvador. The scene represents Columbus finding the New World. The Indians are creeping out of the bushes; they are motioning to each other and they think Columbus's ships are white-winged birds.

GRETEL.

ACT V

The throne was the same as in the second scene, but there were more people. The ladies-in-waiting were there and the courtier, wise-men also, but the new ones were the sailors and the mate. There were Indians and gypsies. They were all dressed in bright colors. It all looked very rich, for you know Spain was very rich then.

HELEN.

The children also wrote individual accounts of how they made their stage properties. After the play was given they wrote letters to the departments that had helped them. They placed these accounts and letters in their booklets.

The Cast: The names of those who took part in the Columbus play in the Assembly are as follows:

Bartholomew	Thalia
Columbus	Page
Sailors: 1st sailor.	Carol
2nd sailor	John
3rd sailor	David
	Susan
Gypsies	Barbara
	Audrey
	Helen
King.	William
Courtier.	Gretel
Queen	Pauline
Wise Men: 1st wise man.	Elizabeth
2nd wise man	Stephen
	Florence
Ladies-in-waiting	Maud
	Sarah
	Arthur
Indians	Clair
	Sophie
	Laurance

The Play:

ACT I.—At the Wharf in Genoa.

ACT II.—Columbus before King Ferdinand and Queen Isabella.

ACT III.—On Board the *Santa Maria*.

ACT IV.—The Landing at San Salvador.

ACT V.—Columbus's Return to Spain.

ACT I

AT THE WHARF IN GENOA

[This scene takes place on a wharf in Genoa, Italy, about 1461. Columbus, then a boy of fourteen, is sitting on a low wooden post reading Marco Polo's book. He closes his book and looks far out to sea and dreams. His brother, Bartholomew, comes by and looks at Columbus's book.]

Bartholomew: Hello! Cristoforo! Dreaming as usual! What is that book you are reading?

Columbus: It's Marco Polo's Travels. Listen! It tells all about the wonderful things that Marco Polo did and saw in China. Did you know that the streets and temples and palaces there are gold? My! I wish I could go to China!

Bartholomew: Oh! you could never get there! Come on, Cristoforo, let's play tag.

Columbus: Look! Look! Bartholomew! There's a caravel! Maybe it's from the Far East. I'm going to see it unload. Don't you want to come?

[Sailors begin to unload the caravel and to carry the goods to the warehouse.]

Columbus: Where have you been, sailor, and what have you in your bag?

First Sailor: Gold, pearls and precious stones from Cepango! I must hurry back to the caravel.

Columbus: I wish he would tell me what he saw.

Second Sailor: Hello, boy! Don't you want to help me carry this chest and I will take you on board the caravel.

Columbus: I will help you gladly. Won't you tell me what you saw on your trip?

[The second sailor tells his story to Columbus as they continue their work.]

Second Sailor: This chest came from the noble Spice Islands. There is pepper in it, fifty pounds, enough for a gift to a king. Our cargo was brought across Asia by a caravan. Many men were killed by the Tartars and many chests of pepper and bags of gold were stolen. After we loaded the cargo on our caravel so violent a storm came up we all wept and prayed for we thought we would never see home again. But here we are!

Columbus: Oh! I wish I could be a sailor!

ACT II

COLUMBUS BEFORE KING FERDINAND AND QUEEN ISABELLA

[This scene takes place in Spain in 1492. Thirty-one years have passed. Columbus has sailed on many long voyages and has come to believe that the world is round like a ball and that he could reach the rich east by sailing west. After trying in vain for assistance at the courts of Portugal and Spain he is called back to the court of Spain by Queen Isabella. The court is assembled and is being entertained by a gypsy dance. A courtier comes in bearing a letter.]

King: Speak, what message bring you?

Courtier: A letter, Your Most Noble Majesties, from Cristobal Colón.

King: Let us hear it.

Courtier: To Your Most Invincible Majesties, King Ferdinand and Queen Isabella:

I, Cristobal Colón, beg to be granted an audience with you in order to relate to Your Highnesses again a -lan for getting the riches of China.

Your humble servant,

CRISTOBAL COLÓN.

King: Bring him before us. Would that we had those riches.

[Courtier returns with Columbus.]

Queen: Speak, Cristobal Colón, and tell us your plan once again.

Columbus: Your Highnesses, I have studied maps and have read and sailed the seas and have thought a great deal and I have come to the belief that if I sailed west long enough I would come to China.

[Wise men laugh and make remarks to each other.]

First Wise Man: Do you mean that the world is round, like a ball? If it was, how would the water stay on?

Second Wise Man: If the world were round the people on the other side

would walk on their heads. You are a fool to think the world is round when it is flat!

King: I will not give ships to such a fool!

Queen: Nay, let us hear more from this man.

Columbus: But, Your Highnesses! You do not understand! All the earth and water in the world make a sphere and it is possible to go round it until men on one side stand foot to foot with those on the other. As the greater part of this globe has been navigated and travelled over except the space between India and the Azores it will be a very simple matter to sail west over this unknown part and thus reach India.

Queen: It sounds like a very good plan but I do not have the money.

Columbus: Farewell, Your Highnesses. Sadly do I depart.

[Columbus starts to leave.]

Queen: Stay, stay, my good man! I believe in your plan! I will sell my jewels if necessary. I am resolved to send you, Cristobal Colón, to the said parts of India to see the said princes and cities and lands, and order that you should go, not by land to the eastward, as has been customary, but that you should go by way of the west, whither up to this day, we do not know for certain that anyone has gone.

[Queen sits and confers with King while Columbus kneels.]

Queen: Unto this end I will equip three vessels for you, well suited for such service. You may depart from Palos well supplied with men and provisions.

ACT III

ON BOARD THE "SANTA MARIA"

[This scene takes place in the cabin of the ship at night. Columbus is reading his diary and writing the record for the day.]

Columbus: (turning over his diary). It is almost time to write again.

[He turns back to the first page and reads.]

"Friday, 3rd of August—We departed on Friday, the 3rd of August, in the year 1492, at 8 o'clock, and proceeded with a strong sea breeze until sunset, toward the south."

[He turns over a few pages and reads again.]

"Sunday, 9th of September:—On this day (Sunday, Sept. 9) they lost sight of land, and many, fearful of not being able to return for a long time to see it, sighed and shed tears. But the admiral comforted all with big offers of much land and wealth to keep them in hope and to lessen their fear which they had of the long way.

"Saturday, 15th of September:—This day and night we made 27 leagues and rather more on the west course; and in the early part of the night there fell from heaven into the sea a marvellous flame of fire, at a distance of about four or five leagues from us.

"Friday, 21st of September:—Most of the day it was calm, and later there was a little wind. During the day and night they did not make good more than 13 leagues. At dawn they saw so much weed that the sea appeared to be covered with it, and it came from the west. The sea was very smooth, like a river, and the air the best in the world. They saw a whale, which is a sign that they were near land, because they always keep near the shore."

[Just here a knock is heard.]

Columbus (writing diary for September 26):—"The Admiral continued on the west course until afternoon. Then he altered course to S. W., until he made out that what had been said to be land was only clouds." Enter!

[The mate enters.]

Mate: Sir, my men grow mutinous. They threaten to throw you overboard.

Columbus: Tell them they will get much gold and to the one who sights land first, I will give a silken doublet.

Mate: They will not listen to soft words and entreaties, Sir.

Columbus: Tell them to give me a few more days.

[Mate bows and leaves the room. Columbus paces cabin floor then resumes writing. Suddenly shouting and cries of "Land, land!" are heard coming from below. The mate rushes into the cabin where Columbus is writing his diary.]

Mate: Rodrigo has sighted land—land—real land!

[Sailors rush in shouting: "Land, land, Admiral, land!"]

ACT IV

THE LANDING

[This scene takes place on the Island of San Salvador. The Indians have sighted the three ships and think they are great white-winged birds. Columbus and his men land.]

Columbus: In the name of Ferdinand and Isabella, I name this land San Salvador.

[Everyone kneels.]

ACT V

COLUMBUS'S RETURN TO SPAIN

[This scene takes place in the throne-room. Columbus is honored by the King and Queen for the success of his voyage.]

King: Admiral of the Ocean Seas, we greet you in Spain.

Columbus: Your Most Honored Majesties, I greet you.

Queen: Pray rise, Admiral of the Seas. Sit you in this chair and relate to us something of your voyage.

Columbus: Your Highnesses resolved to send me, Cristobal Colón, to the said parts of India to see the said princes, and the said cities and lands and ordered me not to go to the eastward, by land as has been customary, but that I should go by water to the west whither we do not know that any one has gone. What happened each day I have set forth in this journal. When at last, on the 12th day of October at 2 o'clock in the morning, we sighted land there was much rejoicing. In the parts of India we explored are many natives and strange fruits and vegetables. The natives say there is much gold to be found.

Queen: Wonderful things have come to pass—for the glory of God and the Kingdom of Spain.

[At a signal from the Queen the followers of the court kneel and sing the *Te Deum*.]

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D. *Two Library Assemblies.*

The librarian is a regular member of the teaching staff. She gives brief talks about books to different grades, tells stories to the little children and sends annotated lists to class rooms to help in choosing books. She also collects and uses for lists and suggestions the book cards written by the elementary school pupil for the books he reads.

She says in describing her work in the school: "A school library which is worthy of the name, must be a vital part of the school, functioning in connection with every department and not serving merely as a storage place for little-used material. The library must provide a working collection of books which shall serve the purposes of pupils and teachers in connection with class-room and laboratory work. Books for general reading that will broaden the interests of pupils and help to cultivate a taste for good reading are an important part of the library. There must be guidance from teachers and librarian to stimulate interest."

Systematic instruction in the use of the library is given so that pupils will be able to make intelligent use of larger libraries. This is done in connection with work for regular curriculum studies. For example the fourth grade had to use a great many reference books to gather all the information necessary in the preparation of the Christopher Columbus play. The children went to the library with their topics and the librarian helped them get books by methods consciously planned to enable them to do reference work on any topic in any library.

In making the tentative program for elementary assemblies in the fall of 1918 the committee included a meeting on the use of the library in the elementary grades. The librarian asked each teacher to have her grade prepare a short statement about their use of the library. Each class prepared its story independently. The speakers were chosen by the class on the basis of the best contributions to the discussion. The following is a corrected stenographic report of the assembly:

1. HOW WE USE THE LIBRARY

Introduction by the librarian.

A week or two ago I wanted to tell someone how much our library is used. I counted up and I found that in four months this year we have used books for home reading almost twice as much as we used them in the whole eight months of school last year. Now this is partly because the school is larger but it is mostly because we have all been using the library more. Our library room is small. When a high-school class is sitting at the tables and some of you come in to look up something, perhaps we have to ask someone to move so that we can get to the shelves to get the books we want. In another sense it isn't small at all—it's big, it's the biggest room in the school. It is big because it is a starting point, a gateway to the whole wide world, and there is a great deal more than at first you see.

Shall I tell you what the library really is? It is a room with many windows and through every one of these windows you can see a pathway that leads away and away into the distance. Through one window you can see a pathway that leads through all the forests of the fairy tales; through another window you look out on the wide blue sea with ships sailing on it—the ships of the Phoenicians and the Greeks—of Jason and Odysseus—far away you can see Sinbad's Island and the land Gulliver travelled to. Through another you can see a shady pathway that leads to the heart of Sherwood Forest, where Robin Hood and Maid Marian and Friar Tuck, and King Richard are waiting for us. Through another, a straight white highway along which two knights are riding hurriedly far in the distance, we can see where the sun shines on the armour and shields and spears of many other knights fighting in a tournament. Each of us can choose the pathway that pleases him best and follow it.

Not so long ago there lived a man whom all of you know something about. Some of you know the stories he wrote, "Treasure Island," and "Kidnapped" and "The Black Arrow," and all of you know his poems in the "Child's Garden of Verses." Now this man, whose name is Robert Louis Stevenson, loved books so much that he said once that some of the people he knew in books were more real to him than people he knew in real life. He knew all the pathways that lead out from a library and once he wrote a little poem—"Fairy Bread." But some of us who read it think that the place to find the fairy bread he is talking about is in the library. Sarah is going to say it for us.

Sarah (3rd grade): We love the library so much that we think that this poem is the spirit of the library calling to us.

FAIRY BREAD

Come up here, O dusty feet!
Here is fairy bread to eat.
Here in my retiring room,
Children you may dine
On the golden smell of broom
And the shade of pine:
And when you have eaten well,
Fairy stories hear and tell.

ROBERT LOUIS STEVENSON.

FIRST GRADE

Barbara: Miss — has given us lots of books to look at and to look at the pictures and to learn to read. One day we went up to the Library and Miss — told some stories. There were two stories; one was about Mrs. Santa Claus and Santa Claus and I have forgotten what the other one was; and some of us sat down on the chairs and there were books all around the room and some of us sat down on the nice soft green rug and then she told us the story and she showed us Santa Claus going down the chimney and some little rabbits in the snow made of cotton.

SECOND GRADE

Charlotte: One day last fall we all went up to the Library. We sat around Miss —'s desk and she told us a story of the Little Lame Prince, how he had been shut up in a tower and couldn't see anybody and nobody could see him, and one day a fairy godmother came into the tower and brought him a magic travelling cloak, and she said he could sit on the travelling cloak and wish where he wanted to go and it would take him where he wished. After that Miss — told us that we have a magic travelling cloak just as much as the Little Lame Prince has and what do you suppose that is? It is books. All over her desk she had selected books which she thought the Second Grade could read and we have been deciding where we wanted to go and they have taken us all over the world.

Lawrence: We have been reading a great many books and here are some of them. I read this book and it took me up to the North Pole. It told me about the Eskimos, how they live and about the food they have and about the clothing. Here is another book that I have read. It has told me about the people in Holland, how they live and about their dykes and windmills and about two children called the Dutch Twins. I hope I can go there some time.

Jean: This book tells me about the farm and it tells how the harvesting is done and how the machines are used and it was a lot of help to us. This book here takes me to Fairyland and I have a lot of fun there.

Bobbie: We cannot tell you all the books we have read and where the magic cloak has taken us to. Our class made a book that has all the places that the magic cloak has taken us to. Under each child's name are the books he has read.

THIRD GRADE

Helen: The first day of school we found that all of us liked to read in the third grade. So we went to Miss — and she chose the books she thought we would like to read and she told us a little about each book. A few days later she sent us a list of the books that she had told us about and a little about what they were and we tacked the list up on the wall of the classroom and whenever a child wanted a book she would go to this list, pick out any book that she thought she liked to read and write down the name and take it

to Miss — and get the book. Then we thought we would make a catalogue and when we finished a book we would write about the book, whether we liked it or whether we didn't and what we liked about it and this would help Miss — to know whether we liked that kind of book and would help her to tell other people what kinds of books the third grade like to read.

We have this box which we call the card catalogue of books we have read for the third grade and these are the cards of books that all the different children have read. That shows you about how many books we have read.

Fred: This is another way we use the library. Augustus had finished his battleship. He asked his room teacher to guess what he wanted to do. She asked, "What?" and Augustus said "I am going to put my ship in full dress." That means with all the flags flying as they came into harbour a few days ago. Miss — said "What flags do ships fly?" Augustus said, "I don't know." Miss — asked where you can find out and Augustus said, "I don't know." Miss — said, "You go to the library to find out things like that." He came in very early one morning. He went up to the library and came down with this book, "Flags of the World." It tells you about all the flags of the navy. And that is another way we use the library for any information.

FOURTH GRADE

Bud: The library is a help to the fourth grade in many different ways. There are four distinct ways—the first one is in taking books out to read at home or in school, the second is reference books. These have been of very much help to us in our studies. The third is helping individuals in study. That is, someone might make a flower book and he went up to find out the different flowers and pictures of them. The fourth one was when Miss — told us stories, and also we went up to read stories and then came down to tell them to the class. The reference books proved to be about the most helpful.

Donald: We found that in reckoning up the class had used the library in getting references in geography, in history and all studies and these are the books we used most often because you can get most anything out of them.

"Encyclopedia (New International)"

"Young Folks' Encyclopedia"

"Atlas"

"Big Dictionary"

"Peeps in Many Lands"

"Allen's Europe"

John: The library has been of great use to us in some of our studies and these are some that we used the library for most. When we studied Russia we went to find out all kinds of things about Russia, France and Belgium. About the sugar industry, Marco Polo, Lumber Industry, Study of Long-fellow and others.

Emily: John has told you of the ways in which the library has helped us. I am going to tell you how different children have used it. They have used

it for the study of flowers, birds, telescopes, glass blowing, boat building. We went to the public library to see Russian picture books.

FIFTH GRADE

Virginia: One day Miss —— came to our room and told us of English laws and customs in the time of Robin Hood and why he became an outlaw, and what he did and how he lived.

We got books from the library and saw pictures of old England and stories of Robin Hood. After the dramatization of several of the stories we decided to arrange some of the stories into the form of a play.

To make a study of costumes for the play we went to the 42nd Street Library and saw some pictures and illustrated books of Robin Hood and his men.

Florence: In studying about the milk strike we read current news. Current news means that we read magazines and daily newspapers. We also used the library as a classroom in the study of reference books such as "The Story of Milk," "The Story of Food," Allen's Geography, and the Encyclopedia. We also read magazines that showed illustrations of dairy farms, separators, ranches, etc. After we had read the reference books we came down to the classroom and reviewed for the class what we had read. In that way everybody did not have to read the same book.

SIXTH GRADE

Jane: I am going to answer three questions which have come up during the term. The first one is, How many children take books? 2. What kind. 3. What do they get from them?

The first class, don't take any.

The second class only 5 children take books. They just like fairy stories. Then they read or tell them in the luncheon periods.

In the third grade all the children take out books. They like fairy tales, some like stories of adventure, and most of all they like sea stories.

In the fourth grade, they like stories of adventure, war stories, also books on mechanics. They try to make the things they learn in mechanics. They act fairy tales and tell people the other stories. In the fifth grade, they like fairy tales, myths, and adventures, boy stories and engineering. The sixth graders like the same kind of stories.

[Here some book notes were read, written by 6th grade children.]

Katharine: Miss —— told you that from the library windows you could see paths leading to all the lands. The poem that I am going to tell you was written by Robert Louis Stevenson to guide his book into the world and tell you the nicest things a book can talk about.

Go, Little Book, and wish to all
Flowers in the garden, meat in the hall,
A bin of wine, a spice of wit
A house with lawns enclosing it,
A living river by the door,
A nightingale in the sycamore!

2. HOW WE USE BOOKS

The second library assembly was held in 1921 with a specific purpose in mind. The librarian had been having some trouble with carelessness. "Book week" offered a good opportunity to carry on a campaign for the proper use of books and the library. An assembly could be made an effective and interesting part of the campaign. The outline gives the plan that was sent to the teachers in the elementary department. The report on the making of books was assigned to the sixth grade because they were making a study of printing. An excursion to a publishing house was planned as part of the study. This was taken before the assembly and the children gathered information. The fifth grade reported on the increased cost of books because the work fitted in with the work they were doing in mathematics. The other subjects were assigned on the basis of their general suitability to the age and ability of the children.

During the week posters made by children in the elementary school to show the right way and the wrong way of treating books, were placed in different parts of the building. Lists of books interesting to the different grades were posted on the bulletin boards in the second-floor hall, as were poems, quotations and pictures which had to do with books and reading. Charts made by the first and second grades, showing the books read by the individual children, were also posted and some of the book reports written by the third, fourth, and fifth grades. An exhibit from Harper Brothers' Publishing House, which the sixth grade visited, showing the process of printing a book, was placed on a table near the bulletin boards.

Special emphasis was laid on the responsibility about books which a good citizen ought to feel, both in regard to the care and treatment of personal books and of library books, and the prompt return of library books. At the same time, however, the lists on the bulletin boards and in the assembly itself, especially the "Shelf of Books," served as a stimulus to reading.

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The program for the assembly was printed in the form of a bookmark.

This assembly was particularly successful. There was a noticeable improvement in the children's use of the library and care of books. The book shelf gave the audience a vivid picture of those books. Pupils are still asking for them because of the impression the shelf made.

The following plan was given the teachers to serve as an outline in preparing the program:

Tentative plan for library assembly.

- a. Simple dramatization by the children, perhaps two from each of Grades 1-6. They will represent, in costume, certain books appropriate to each grade. These "books" will be in the library, i. e. in a row on the stage. The librarian will supposedly have a group of children in the library, will talk a little about these books and show them to the group. The verse "You are old, little book, etc." is to be used as a dialogue between a book and one of the children in the group, at the end.

- b. The Making of Books.
Sixth Grade.

- c. The Cost of Books.
Fifth Grade.

Books have increased greatly in cost; it is therefore a matter of thrift to prolong the life of a book by careful handling since no individual or library can buy as freely now as in the past. Charts and perhaps graphs to show the increased cost of books.

- d. The Care of books.
Fourth Grade

- i. What is careful use of books?
 - (a) Keeping them clean so that other people may enjoy reading them.

- (b) Not leaving them open, face down on desks and tables—this breaks their backs.
 - (c) Not using pencils and other thick substances for bookmarks.
 - (d) Not dropping them—which loosens the cover and the sewing along the back.
 - (e) Not losing them—by not returning a book promptly we deprive other people of pleasure.
(When you lose a book you should report it at once to the library, look for it carefully, and if not found, replace it.)
2. Why we should use books carefully:
- (a) By treating them carelessly we destroy valuable property, and, in the case of library books, property belonging to some one else.
 - (b) We force the people who use them after us to read books which are soiled and unattractive, instead of volumes which are fresh and clean.
 - (c) We deprive ourselves of the privilege of enjoying books that are fresh and clean.

When the assembly began, the "Shelf of Books" was already in place on the stage. The books represented by children in costume were as follows:

- | | |
|--------------|---|
| First Grade | "Little Black Sambo," by Helen Bannerman
"Cinderella" |
| Second Grade | "Adventures of a Brownie," by D. M. Craik
"Red Feather," by M. E. Morcomb. |
| Third Grade | "Heidi," by J. Spyri
"Donkey John of the Toy Valley," by Margaret Morley |
| Fourth Grade | "Treasure Island," by Stevenson (A pirate)
"Tom Sawyer," by Mark Twain |

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Fifth Grade "Lamb's Tales from Shakespeare" (Rosalind)
 "The Arabian Nights" (Ali Baba)

Sixth Grade "A Book of Ballads,"—containing Robin
 Hood
 "Young Akin"

Enter Thalia, John, DeVeaux and Rion, Albert and one or two more, representing a group of children coming to the library. The librarian was sitting at a table, near one end of the "Shelf of Books." A stenographic record of the assembly follows:

"A SHELF OF BOOKS"

PART I

DeVeaux: Here's "Black Sambo"—I am going to read this book, O, its such a surprise to find it here!"

Miss —: Now children, I am going to talk to you about some of the books in our library—suppose you all sit down.—You see we have all kinds of books here—some for the boys and girls in the first grade as well as for the boys and girls in the fourth, fifth and sixth grades. DeVeaux, you said you were going to read "Little Black Sambo"; maybe some of you have read it already and if you have you remember how he had to give his beautiful red coat and his beautiful blue trousers and his green umbrella and all the rest to the tigers—and how, when the tigers quarrelled and all ran around the tree saying "Gr-r-r-h!" he got them back again? Now on the shelf right next to "Little Black Sambo" there is another book that DeVeaux and all the other first-grade boys and girls will want to read and that's the story of "Cinderella." There she is on the shelf next to "Little Black Sambo." Read about her and see what happened to her and her little glass slipper.

Miss —: Now let us see what we have for the second grade. There is a book away down at the end of the shelf—It tells about a house that had a brownie in it. It is called "The Adventures of a Brownie." That brownie lived in the coal cellar. He was a very kind and helpful brownie, when people were thoughtful and unselfish, but if they were cross and selfish that brownie played some of his tricks upon them, that made them remember next time. How many of you like to read about Indians? Here is an easy book about a little Indian boy called Red Feather. His mother was called Morning Star and his sister White Cloud. This book tells you how they played and dressed and hunted and built their houses in the forest.

Miss —: For the 3rd boys and girls here is a book called "Heidi." You know there is a wonderful thing about books—they will take us to any country that we want to go to. They are like magic travelling cloaks and some of you will surely want to go to the mountains of Switzerland. The little girl in this book, Heidi, loved the mountains. So it was very hard for

her to leave them and live in the city when she had to go there to be a companion for a little girl who was ill. But she came back to the mountains. The little friend came too, but what happened to them both—how the wheeled chair that poor Clara, the little sick friend, had to use, mysteriously ran down the mountain side and how that was really a part of Clara's getting well—well, I am going to let you read for yourselves what happened. When you are reading about those mountains you might like to read about a boy—in the next book to "Heidi"—it is called "Donkey John of the Toy Valley." He lived in the mountains too. Do you know why they called him Donkey John? Because he wanted to learn to carve and make toys more than anything else in the world and because he wanted to so much and tried so hard he did learn at last to make the most wonderful toy donkeys in the whole toy valley, so they called him Donkey John. The people who lived there in the valley made toys for boys and girls all over the world. I wonder how many of you like to read about pirates. Well; that book on the shelf, fourth from the end—

John: This one?

Miss—: Yes, that book is just full of pirates—it was written by Robert Louis Stevenson and it is called "Treasure Island." All of you, even the first and second grades know one other of his books—"The Child's Garden of Verses." A map showing a place called "Skeleton Island" with a cross mark to show where the treasure was buried, fell into the hands of an English boy named Jim Hawkins and he and some of his friends, older people, sailed away in a ship to find that treasure, but the pirates who had put it there wanted it too, so they pretended they were sailors and sailed on the same ship. Jim Hawkins, overheard them talking when he was down out of sight in an apple barrel and you can imagine that after that exciting things began to happen on that ship. And next to that book on the shelf is another that the fourth-grade boys and girls will like to read, or the fifth-grade and the sixth-grade boys and girls—and probably after you are grown up men and women you will come back and read that book. This book is called "Tom Sawyer," and it is about a real boy, perhaps as real a boy as there is in any book. He did—well, he did so many things I couldn't begin to tell you all I believe he did, something on every page and on some pages he must have done two things. He ran away and he went fishing and swimming, with his friend Huckleberry Finn, and he played pirate and looked for buried treasures and played Robin Hood, and one day he whitewashed a wall!

Thalia: Do you think I could read Shakespeare's plays?

Miss—: Perhaps not the real play yet, Thalia, but there are some stories about the plays I am sure you will like. Once a man named Charles Lamb thought "I believe boys and girls would like to know the stories of some of Shakespeare's Plays; so he and his sister, Mary Lamb, told these stories over again, for boys and girls; the book is always called "Lamb's Tales from Shakespeare"; see there it is on the shelf, and one story you must read, Thalia, is the one called "As You Like It." It tells you about a girl named Rosalind, who ran away to the forest of Arden with her cousin Celia. She dressed

herself as a boy and she and Celia lived in a little cottage and pretended to be shepherds. They had a wonderful time pretending! But what happened to them in the Forest of Arden—I am going to let you read for yourselves. I wonder how many of you like to read about magic and mystery and underground caverns and jars full of gold and robber captains and magic words and flying carpets? You will find a book on the shelf there called "The Arabian Nights." That is just full of all of these things and more—one story is about a man named Ali Baba and how he found the cavern of the forty thieves and how afterward he nearly took those forty robbers into his house thinking they were forty jars of oil but with the help of a very clever girl, Morgiana, he found out that it wasn't oil in the jars, but robbers! But how she found it out and what she did afterward, I'll let you read for yourselves.

John: Have you any books of ballads, Miss—?

Miss—: Oh, yes, John. One of you asked me the other day if we had a story of Robin Hood; I am glad you reminded me. Down nearly at the end of the shelf. See if you can find it. Yes, that is it. You know some of the first stories ever told about Robin Hood were in ballads. Find a Robin Hood ballad, John, and tell us a little about it.

John: Robin Hood, Little John, Will Scarlet and Arthur A' Bland were walking on a hot summer day. They lay down under a tree and they got some food and ate it; after they had eaten they began to sing songs. During Little John's song Robin Hood interrupted him and said, "Who is yon miller?" Quoth Little John, "I know not, but I do know that it is a shame to check the flow of a good song." Quoth Robin, "Be not sore Little John, but I must find out who yon miller is." The miller had broad shoulders and a sack on them. Then Robin said "Hold man!" The Miller said, "Who bids me stay?" "I do," said Robin, "Arthur, search the miller." "Nay good master, I will give thee the money in the bag." The miller, the four men all crowd around the bag. The miller sticks his hands in and then says, "Ah!" Then he pulls his hand out quickly and puts a lot of wheat in their eyes and then gives them each good raps. Then Robin blew his bugle and Will Stutely with a band was near and came and grabbed the miller. They found his name was Midge the Miller. Then they went back and he joined the band.

Miss—: Tell us the name of another ballad.

John: "Young Akin." It tells about a princess that was stolen by a cup-bearer.

Miss—: Now that is all we have time for. You had better go or you will be late for your next class. I hope you will all come again soon.
[Children leave stage.]

As she is leaving Thalia brings "As You Like It" to desk to be marked.

Miss—: That will be due a week from to-day.

Thalia: That's Wednesday, isn't it?
[Enter Peter.]

Peter: Miss——, have you a copy of “Heidi”?

Miss: Yes, Peter, see if you can find it on the shelf, about the middle.
[Peter takes out “Heidi.”]

Peter: Oh, here’s a nice copy of “Heidi.”

Dialogue—between the book (“Heidi”) and the Boy (Peter).

Boy. You are old, little book
Yet your pages are still clean and white,
Your covers are stiff and your corners are straight,
Do you think at your age it is right?

Book. In my youth,
I came into the hands of children who handled with care,
They opened me gently, their fingers were clean
My margins they kept clean and fair.

They never used pencils as book marks, or tried
To pull me apart in their strife,
With such care and treatment, my strength and my looks
Will last me the rest of my life.

PART II

THE MAKING OF BOOKS. (GRADE SIX)

Alice: Author’s Manuscript.

The author’s manuscript is the most important part of a book. Scribner’s Sons for instance could not say, “We will write a book,” and print one. An author must write a book and ask Scribner’s Sons to accept it. Then some critics look at the book and correct it and if there is anything they are in doubt about they send it back to the author who must prove he is right or correct it. Then it is accepted or refused. Then they decide what size pages, and color, cover, and size type to be used. Then it is sent to the monotype machine and written in a dot code.

Donald: There are a great many details in the finishing of a book. For instance, the ends like this have to be put on. There are also quite a few other such details. This is one of the books we made in our class. It takes a long time to make a book.

I suppose you do not know how this cover title is put on. First they take a sheet of colored paper the color of the design, and put it on where the design is to be. Then they put the whole cover in a press under hydraulic pressure and stamp the design on the book. All unnecessary paper is taken off and thrown away.

Herbert: The first thing we saw when we went to Scribner’s was a girl at the monotype machine. It has keys like a typewriter but instead of printing it punches holes. This is Nelson’s name. [Shows type.]

After the paper comes in long rolls, it is put into the casting machine and each line of type comes out on a galley or trough. Then a proof is taken and sent to the author. He makes corrections that are necessary and then it is sent back to the company. After the corrections are made in the type it is divided into pages and they are put in certain positions so that when they are folded the pages will come out right. After they are arranged another proof is taken and sent to the author. He isn't expected to make many corrections this time. For instance on this proof is a correction where a "w" is where it shouldn't be. After the proof has come back to the company and the few corrections are made and the type is locked in a chase, it is necessary to make an electrotpe if you expect more than one edition. After the electrotpe is made and the book is printed they put the electrotpe in their vault where they keep the valuable things and if you want another edition they print it over.

A Teacher: Why do they store it?

Herbert: If they left it around the shop it might get damaged.

Geraldine: Making of Books.

I am going to tell you about the making of books, which consists of the folding, sewing, cutting and glueing of the printed sheets inside the covers. The first thing done to them after they are printed is to fold them. This is all done by machine. A person sits at one end of the machine, which is quite large, and piles up the folded sheets which are called signatures. This is what the sheets look like when they go into the machine, and this is a signature after being through the folding process. You see that the large sheets are printed on both sides and that they are cut up into sections of usually sixteen pages. Next comes the sewing. A person, usually a woman, sits in front of the machine which sews the signatures together, and counts off four of the signatures at a time from the pile in front of her. Often a great many books are sewn together, sometimes amounting to piles two or three feet high. Then they have to be cut apart and the threads like these are often broken off very short. Therefore, they have to be glued down. In the sewing a piece of tape is placed here, on the threads to hold them in place. Then comes the glueing, where the short threads are glued down, and a piece of what is called "super" and looks like very coarse net is glued in the back. The book has, also, to be glued to the covers.

Lawrence: How a Case Cover is Made.

For making the case cover there is a small machine and on one side of the machine are three piles of things—on the two sides of the pile are big pieces of thick cardboard called "boards" and in the middle Manila paper used for the back of the book. Here are the boards and the Manila paper in the middle.

Then on the other side of the machine is a pile of bookbinder's linen. Here is some book-binder's linen.

The bookbinder's linen goes around a wheel full of paste and then goes down on to a flat place, then two boards are pushed off their pile and are carried to where they are put down on the linen. Then flappers come up and

fold down the sides. Then it is put on a "carry" and taken away and piled up to dry. Here is the cover ready for the next process.

Alex: Putting the Cover on the Book.

There is a machine for putting the cover on the book that has five or six arms coming out from a revolving pole and a book is put on each arm. When the book comes underneath the cover the cover comes down on the book and the glue that is on the cover makes the two stick together.

PART III

THE COST OF BOOKS. (GRADE FIVE)

Arthur: The fifth grade was interested in the increased cost of books. This was due probably to the increased cost of paper and of labor and that some of the things could not be gotten at all during the war. If a library wanted to buy these eighteen books—

"Jim Davis"
"A History of France"
"The Young Trailers"
"The Last of the Mohicans"
"The Adventures of a Brownie"
"The Boy Mechanic"
"The Boy Pioneers"
"Heidi"
"The Complete Nonsense Book"
"Granny's Wonderful Chair"
"Treasure Island"
"The Children's Book"
"Robin Hood"
"The Joyous Story of Toto"
"From the Earth to the Moon"
"Little Women"
"The Arkansas Bear"
"Hans Andersen's Fairy Tales"

in 1913 it would cost them \$29.15—if they wanted to buy them in 1921 it would cost them \$50.75—the difference being \$21.60. If a library had a certain amount of money it would only be able to buy half the books it could in 1913 so you see we have to be much more careful with our books now.

Susan: There has been a great increase in the cost of books. The cause of this was less labor and more expensive materials. "Jim Davis" in 1913 was \$1.25 and now it is \$1.65. "Robin Hood" was \$2.50 and now it is \$3.50 and that is an increase of \$1.00. "The History of France" was a great increase—\$2.50 to \$5.00—that shows the increase in the cost of books as Arthur has shown.

Pauline: I made a chart to show the same thing as Susan. Here is the name of the book and author and here the cost in 1913 and here is the cost now, and this is the difference. "Jim Davis" by Masfield cost in 1913 \$1.25

and there is 40 cents difference. "The Complete Nonsense Book," by Edward Lear cost \$2.50 in 1913 and now costs \$4.50—\$2.00 difference. "The Adventures of a Brownie" by Craik in 1913 cost \$.60 and now it costs \$1.00—and there is 40 cents difference.

Helen: I made this graph for the same reason. Then I showed the increase in "The Boy Mechanic" from \$1.50 to \$2.50—increase \$1.00 and then I showed "Treasure Island" which was increased from \$1.00 to \$1.60—60 cents increase. Then I showed "Hans Andersen's Fairy Tales" from \$5.00 to \$10.00—\$5.00 increase. The difference doesn't seem very great when you read it but when you add it, it is.

PART IV

THE CARE OF BOOKS. (GRADE FOUR)

Natalie: About one of the worst things you can do to a book is to let it get wet. When I was little I left a book out on the veranda and as it was a very nice day and I wasn't thinking at all about the book, I just left it there. The next morning it was all dripping with dew and rain and it was all sort of lumpy in certain places and had lots of brown lines on it. I read that book last year but I did not enjoy it half so much because it was not so attractive.

Clarence: After you eat or when you are playing you should always wash your hands before reading a book. For when you get a fresh book from the library and you get it all soiled with your sticky fingers no one else will care to read such a book. And how would you like it after you got a book after other people have soiled it with their sticky hands—for instance once when I was eating my breakfast and I was looking at the book I was going to read to the class I got it all soiled with my sticky fingers and when I brought it back to Miss—she said no one else would like to read such a soiled book and so after that I never get my books sticky and before reading a book I always wash my hands if I have been eating or playing.

Billy: The way to keep a place in a book is to put a piece of paper or a book mark in it. Do not put thick things like rulers or pencils because it breaks the binding of a book. Don't turn down the corners because they get creased and are liable to break off. Another thing that is very bad is to slam a book down on a desk face downward. It breaks the back and the binding. If I wanted to lend the book to a friend I wouldn't like to give a book that the back was broken and the pages torn. It would give them a bad impression of me and they would think I was very careless in the use of books and they would never want to lend any of their books to me.

Mary: I used to drop my books and the binding would crack and the pages fall out but now I know how to handle my books and I know that every body likes to read well bound books.

John: Suppose that once you went to the library and wanted to get a very exciting book like "Treasure Island" and when you got there it wasn't there and you kept on going for a long time and it wasn't there and you

decided to wait—maybe it would be there by the time you would go but it isn't and you find somebody has taken it—for instance once I had "Rolf in the Woods" for three weeks and when I brought it back and found somebody had come in every day and tried to find it and what's more I was fined and I ought to be fined and only kept it a week and now I would only keep my books a week.

E. Two Science Assemblies.

The assemblies based on high-school work in science were given in 1919-1920; one by the pupils of the biology classes, the other by the physics and chemistry pupils. These programs were given as preparation for a meeting of the Parents-Teachers' Association.

The biology teacher asked the class to prepare three-minute talks on the subjects that had interested them most during the year. Each member of the class chose whatever topic he wanted and received help only in getting references for further work in his subject. He was allowed to speak from notes, but not from a written paper. Each talk was given before the class and the best ones chosen for the assembly by vote of the class. After the assembly the class again voted for the talks to be given at the Parents-Teachers' Association Meeting. The accounts given here were written from stenographic reports of the pupils who spoke at the assembly. The physics and chemistry assembly was prepared in the same way. The talks were illustrated with experiments, apparatus, charts and maps, that were planned and prepared by the speaker. Much more concrete material was used than it has been possible to reproduce here.

It was not possible within the scope of a program to do more than present a few type topics taken from the different sciences. An effort was made to select topics which would show some of the relationships of the different courses. For example, the first four topics which appear on the program are from the work in general science of the seventh and eighth grades and in chemistry of the tenth grade. These topics make possible the representations of the different years of science work and also show the

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way in which the work of one year is used as a basis for the work of succeeding years. In a similar way topics 5 and 6 are related to one another; 7 and 8 form another group and topics 9, 10, and 11 form another group. The pupils' talks are arranged as given at the Parents-Teachers' Meeting.

Following the "Program" a few of the pupils' talks are presented as illustrations.

PROGRAM

1. The air in which we live—General Science, seventh grade.
2. The weather, cyclones, and the Weather Bureau—General Science, eighth grade.
3. The Bunsen burner, its function and relation to other gas-burners—General Science, seventh and eighth grades.
4. Carbon dioxide in modern life—General Science, seventh grade. Chemistry, tenth grade.
5. A few animals of the pond—General Biology, ninth grade.
A few insects of the pond—
6. A few facts about snakes—General Biology, ninth grade.
7. The lead storage battery—Physics, eleventh grade.
8. Some construction problems; the Bunsen burner and steam engine—General Science, eighth grade.
9. Food manufacture in plant life—General Science, eighth grade.
10. Plant propagation—Advanced Biology, eleventh grade.
11. How nature protects her animals—Advanced Biology, eleventh grade.

I. THE AIR IN WHICH WE LIVE

Most of the time we are unconscious of the air. In fact, we ignore its existence. For instance, this bottle—you would say it was empty because there is neither a solid nor a liquid in it, but in reality it is filled with air.

Air is material and we are sometimes very forcibly reminded of this fact when we go out on a windy day. This little experiment here is to show that air is a material. When I pour water in here, it goes into this bottle, and if air were not material, the water would come right into this bottle and noth-

ing would happen, but as air is material, it is forced out through this tube and down here through this water where you can see it and so on through here as you can see. You see the air bubbles rising here. Air is composed of about 78 per cent. nitrogen, 21 per cent. oxygen, 1 per cent. argon and $\frac{1}{100}$ per cent. of carbon dioxide.

As air is a material, it must have weight and pressure. Air pressure is measured with instruments called barometers. There are two general kinds: aneroid which you see here, and the mercurial which you see here. The mercurial barometer is a tube like this filled with mercury and closed at this end, and open at this end so that the air presses down on this mercury here. It can hold a column of mercury about thirty inches high. We measure air pressure in inches. The aneroid barometer has a little box in it with a vacuum in it, and so arranged that as the air pressure varies at different times, it causes this black hand to move. The aneroid barometer is also graded in inches. For every 950 feet that you go up, or ascend a mountain for instance, the air pressure is one inch less and, therefore, the barometer is often used for measuring altitude.

When air is heated, it expands as is proved by my heating this flask, when the air in it expands. Can you see the bubbles coming up, showing that the air in the flask expands?

We have an instrument called the thermometer for measuring the temperature of the air.

2. THE WEATHER: CYCLONES AND THE WEATHER BUREAU

William

A great many weather conditions depend upon winds, so I will mention them first. The principal cause of winds is differences in air pressure. If you have ever watched a barometer for several days, you know that the pressure in one spot is continually changing. This graph [shows chart] confirms this fact. It shows the pressure of each day through February, 1920. There are always differences of pressure in different parts of the country. The air is always flowing from regions of high pressure to regions of low pressure. The greater the difference in pressure, the stronger the wind. On a weather map all places having the same pressure are connected with heavy black lines called isobars.

The center of a low-pressure area and the region about it is called a "low." In the same way a high-pressure area is called a "high." A "low" moves across the northern part of the country at the rate of several hundred miles per day. This map [shows chart] shows the usual courses followed by "lows." The "lows" following this Atlantic course are often more severe than other lows. The two weather maps show clearly the storm area around the "low" and the course taken by it. Since a "low" area has a more or less circular form, and is surrounded by higher pressures, we would expect the air to move straight into the center of the "low." It does not do this, however. It moves a little to the right. This deviation is due to the rotation of the earth on its axis. Because of this deviation, the air circles about a "low" before reaching the center of it. Such a great whirlpool of air, sometimes a thousand miles in diameter, is called a cyclone. When I say "cyclone," I do not mean a very destructive storm. I am speaking of our ordinary

storms. There is usually bad weather in some part of a cyclone because the air is going into a cyclone from all sides, therefore the air in the center is crowded upward and in rising it becomes cooler; the moisture condenses; clouds are formed and produce rain or snow. If there is a large "low" area in the northern part of this country, sometimes so much warm air is drawn north that the temperature rises unseasonable high. This is called a hot wave. In the same manner, if there is a large "low" area over the Gulf of Mexico or over the Atlantic Ocean along our southern coast, it occasionally happens that freezing temperature extends far down the Florida peninsula and along the Gulf coast, doing great damage to the orange trees and early crops of vegetables.

The U. S. Weather Bureau is exceedingly important. It is for the purpose of studying and forecasting the weather as far as possible. All forecasting of weather is based upon the weather map. The map is made each day from the reports telegraphed from observation stations all over the country. These stations can be seen on the weather maps as little circles. The predictions are based almost wholly on the character and actions of cyclones. The difficulties in forecasting are many. Cyclones sometimes entirely disappear, and new ones make their appearance without warning.

Many people think that the storms nowadays are not as severe as they used to be. This graph [shows chart], which we found in a recent issue of the *New York Times* shows the variations from year to year from 1871 to 1919. The winter of 1917-1918 was unusual, that of 1918-1919 was very mild. This graph shows great variation, but when the facts are taken for a long period of years, it is observed that the average temperatures are practically the same.

4. CARBON-DIOXIDE IN MODERN LIFE

Elizabeth

While the Dutch were the first to observe carbon dioxide in 1600, it was a Frenchman, Lavoisier, who proved it to be an oxide of carbon by burning carbon in oxygen obtained from the decomposition of mercuric oxide. Once the chemical composition had been determined, men were anxious to find uses for this gas. As the uses came, a larger production was necessary. For a while it looked as if Germany would lead the world in the production of carbon dioxide, but in later years the production in other countries has been sufficient to meet all demands.

It has been shown that carbon dioxide will not support combustion, and hence fire extinguishers often contain water highly charged with it. This portable fire extinguisher is a common type [shows apparatus.] Inside is placed a solution of sodium bicarbonate. A small bottle contains sulphuric acid. The bottle has a lead stopper, which, when the extinguisher is turned upside down, falls out and allows the acid to mix with the solution of sodium bicarbonate. The acid reacts with the sodium bicarbonate and carbon dioxide is formed. The increasing pressure on the inside of the vessel forces the water, highly charged with carbon dioxide, through the nozzle and may be directed against the fire as a stream. Speaking of "fire water," carbon dioxide is, or rather was, used in the breweries. To some extent carbon dioxide is used in the manufacture of artificial ice. Very likely to the younger generation the most important use is in the preparation of soda water.

While carbon dioxide is readily obtained by the action of hydrochloric acid on marble in the laboratory, it would be rather expensive to prepare it in exactly this way in large quantities. The commercial method is somewhat different.

Coal or coke is used in the production and is burned in the usual way under steam boilers. This gives the carbon dioxide required and also the power required for its purification and liquefaction. The gases which are given off are passed through an absorption system in which an alkaline carbonate solution absorbs the carbon dioxide. The gas is liberated from the boiling bicarbonate solution and condensed by the use of carbonated lye. After further cooling the carbon dioxide is compressed into cylinders in which it goes to the trade.

Just as steam has its liquid form, water, so has carbon dioxide. To most people, this liquid is the most interesting form to study, as it is more difficult to prepare and requires greater care in experimentation. Liquid carbon dioxide is like dew before the sun—it doesn't stay. In order to retain it at all, it is necessary to keep it in steel cylinders. This one [shows sample] holds twenty pounds of liquid carbon dioxide. Faraday, a little less than a century ago, liquefied carbon dioxide with an apparatus similar to this one [shows apparatus]. In this end is placed some sulphuric acid and in the other, some carbonate of ammonia. The acid is then allowed to mix with the carbonate and carbon dioxide is given off. As the tube is sealed and carbon dioxide is not able to go through glass, it is forced to remain in the tube. The pressure is increased very rapidly, and the subsequent cooling produces the "hard-to-keep" liquid carbon dioxide.

Chemistry is really quite a marvelous thing, for among the wonders that it creates, it finds no difficulty in manufacturing snow in the summer time, or as the druggists say, "something just as good," solid carbon dioxide. For all practical purposes, there are only two differences between snow and solid carbon dioxide. First, when you place some solid carbon dioxide on your hand, instead of melting and leaving water as snow does, it doesn't. No residue of any sort can be discovered, except that if the surrounding air be tested, the percentage of carbon dioxide would be higher than is ordinarily so. Second, the chemist does not produce as much snow as mother nature does, and, therefore, the sport of sleighing cannot be enjoyed in the summer time.

In the preparation of solid carbon dioxide, we use a cylinder containing the liquid and gaseous carbon dioxide. A box [shows apparatus] lined with a woolen cloth is placed over this nozzle. We turn the valve allowing the liquid carbon dioxide to flow out. A small part of the liquid immediately vaporizes. As vaporization is a cooling process, it cools the liquid to such an extent as to freeze it. An experiment to show the low temperature produced by solid carbon dioxide makes use of mercury. Some of the solid is placed in a beaker. By mixing it with ether, we obtain what is known scientifically as "carbon dioxide slush." Some mercury is poured into a test tube and placed in this mixture [shows material]. The mercury solidifies at a temperature of 39° C., and is a solid as you see when the glass is broken and removed.

When a strip of magnesium ribbon is thrust into the flame, it burns with a very bright light [demonstrates]. The strange part is that when it is placed into a bottle of carbon dioxide, it continues to burn. A short while ago I

said carbon dioxide does not support combustion. It looks as if I might have to withdraw that statement, but the magnesium is really burning in oxygen, and not carbon dioxide at all. The truth of the matter is that the magnesium has such a strong devotion to the oxygen in the carbon dioxide molecule that it elopes with the oxygen and leaves the black carbon alone on the sides of the bottle.

6. A FEW FACTS ABOUT SNAKES

George

Snakes may be classified in two divisions. First, the harmless and beneficial snakes, such as the black snake, the garter snake, the king, and others of the coluber family. The other division on which I shall mainly speak are the poisonous snakes, the copperhead, water moccasin, and the rattlesnake.

First, the copper-head: the length of this snake varies from $1\frac{1}{2}$ to $3\frac{1}{2}$ feet. It is mottled in browns, resembling the dead leaves on the ground. Its most striking characteristic is the bright copper-colored head.

The next is the water moccasin. This belongs to the same family as the copperhead, but has duller colors. It lives in the water, and is usually found basking on logs, which float on the surface of the water. The water moccasin is often called "cottonmouth" snake, because all the inside of its mouth is white.

The other is the rattlesnake. There are about thirty species in the United States. The color is usually brown and dull gray. Of course, everyone knows this snake usually shakes its tail and rattles before striking.

The best identification of a snake is its head. This drawing shows the heads of a rattlesnake, water moccasin, copperhead, black snake and garter snake. It can be seen that the heads of the first three are triangular in shape, while those of the last two are not as angular, and are connected to the body without a conspicuous neck.

Snakes inject poison by means of fangs, such as these [shows drawing]. The fangs are imbedded in the flesh of the animal bitten, and the poison comes through holes at the end as seen here. When the snake closes its mouth, this membrane is drawn over the fangs and they are folded back under the upper lip. Should one of these fangs be broken off, which frequently happens, there are always three or four other ones in various stages of development to take their place under here.

Another characteristic of the poisonous snake is the pupil of its eye. This is always lens shaped except in the one case, which is before the snake sheds its skin. This makes the eye look all gray because the top layer of skin is dry. At this time the snake is almost blind, and this is the only time when it is really dangerous. This is because the snake, on account of its helpless condition, strikes in order to protect itself at the slightest provocation. In harmless snakes, the pupil is round.

Another identification is the tail. On poisonous snakes, the underside of the tail has a double or sometimes a triple line of scales or scutes, while the harmless snakes have a single row of broad plates.

Poisons of snakes may be divided into two parts—that of the copperhead, water moccasin, and also that of the cobra of India, which is much worse. This poison contains something which gets into the muscle fibres and causes

great weakness. The other is that of the rattlesnake. This has in it an acid which eats into the small blood vessels and cells of the flesh and causes a hemorrhage. This can be seen in the black and blue around the bite.

7. THE LEAD STORAGE BATTERY

Warren

In order to understand the storage battery, it is necessary to begin with the action of a simple electrical cell. This cell is composed of two dissimilar metals, usually a copper and zinc plate, immersed in dilute sulphuric acid. The acid attacks the zinc plate in the solution, and dissolves the zinc. A difference in electrical pressure is produced between the two plates. So when we connect the two plates through an electric bell a current of electricity flows and rings the bell [demonstrates].

In the simplest form the storage cell is constructed of two lead plates immersed in dilute sulphuric acid [demonstrates]. We connect the cell in this condition with the bell, but no current flows. If we send a current through the cell by connecting a dry cell battery to the two plates, bubbles of oxygen gas are seen around the plate where the current enters. Around the other plate are bubbles of hydrogen. Let us disconnect the charging current and examine the plates. This lead plate is now coated with a brownish substance. The other plate is the same as before. We connect the cell in this condition to the bell and it rings for a short time. When we examine the brown plate again, most of the brownish substance has disappeared. The other plate is the same. We know from the first experiment that if one of the two lead plates could be changed into a different substance, we have the essentials of a simple electrical cell, and we could derive a current from it.

This is exactly what occurred in the simple storage cell during the charging process. When we sent the current through the storage cell, it produced a chemical action which caused oxygen and hydrogen to be given off. Part of the oxygen combined with the lead plate to form the brownish substance known as lead peroxide. When the cell was discharged, it acted as a simple electrical cell, and a current flowed until the lead peroxide plate returned to its original condition. Here is a simple type of commercial cell [demonstrates]. It is composed of three plates: the middle plate corresponds to the lead peroxide plate, the two outer plates to the lead one. They are separated by thin strips of wood.

A cross section of an automobile storage battery [shows sample] is composed of three cells similar to the previous cell with the exception that the cells here have many more plates. The storage battery is an essential factor in the starting and lighting of an automobile. This is a diagram [shows chart] showing a typical starting and lighting system. The storage battery is shown at the right. The dynamo generates electricity used to charge the battery. The electric motor is run by the current from the battery, and is used to start the gasoline engine.

The storage battery has a variety of uses. In size it ranges from a simple cell like this which we use in the laboratory, to the immense batteries, covering one thousand square feet in a power plant, and having plates three feet

square. This is a typical medium-sized power plant [shows diagram], showing the arrangement of the batteries.

The storage battery has made the submarine possible. There also is a unique use of the battery in the miner's lamp. Another large and growing use is the propelling of electricity-driven vehicles, such as mine locomotives. Storage batteries are also used to drive street cars and interurban cars. Another growing use is in the lighting of the small isolated farmhouse.

11. HOW NATURE PROTECTS HER ANIMALS

George

Nature has many ways of protecting her animals, and these ways may be divided into two divisions: protective resemblance and mimicry. The first which I want to speak to you about this evening is protective resemblance. When I speak of protective resemblance, I mean that an animal resembles its immediate surroundings in color and shape. To illustrate to you what I mean by protective coloration, I want to tell you about an experience of mine in the country. One day as I walked through the fields, I saw a grasshopper fly up. I watched its flight, and noted the spot where it rested. When I had reached the spot where I thought it stopped, I looked closely, but was unable to find the grasshopper. The reason was because it was protectively colored. Here I have a sample of a rock lizard. You cannot see the coloration very well, but it resembles the color of the rocks on which it lives.

As I said before, some animals are protectively shaped, that is, they resemble a certain part of the surroundings in which they live. For instance, the inch worm resembles a twig very much in color and shape. When it is approached by its enemies, it has the ability to stiffen out on the twig and remain so. Around the body are arc-light bands which resemble very much light spots on the bark of a twig. The inch worm lacks the middle prop legs which are found ordinarily in all other caterpillars, and is able to fool its enemies. The inch worm is able to remain in a very trying position for some time.

The best example I know of to demonstrate protective resemblance is the common walking stick. Here is one in this jar, and if you can see it, it is a brown elongated insect without wings, and resembles a twig very closely. In India there is a butterfly known as the Hallima. Its wings are very dark, and marked with lighter spots. When at rest on a twig this butterfly resembles a dead leaf very closely, because the edges of its wings are jagged edged, and running through the middle of the wing is a dark vein-like structure which runs to a point at the bottom edge of the wing, and giving it the appearance of a portion of the pedicle of a leaf. There are smaller veins which radiate from the larger one, and give the appearance of the veins of a leaf.

Sometimes protective coloration serves the purpose of aggression, that is, the animal takes on a certain shape or color so that it can steal upon its prey and attack it unawares. The great snow owl is a good example. It resembles its surroundings, the snow being all white. The snowy owl is a very powerful and ferocious bird, and swoops down on its prey and captures it.

What I consider more interesting than what I have spoken of previously is the possession of lures by some animals. These are appendages on the body

by which they attract their prey to them. An example of this is found in two fish, the deep-sea anglers. One is known by the fishermen as the "all mouth." From the top of its head enormous feelers protrude, which resemble worms very closely. It lives in the dark depths of the ocean, and manoeuvres itself into the crevices among the rocks. By a writhing motion of its feelers, the angler attracts fish to it which mistake the feelers for worms, and are quickly engulfed in its mouth. The other deep-sea angler has a large appendage protruding from the top of its head, and on the end of it is a luminous bulb. When the fish swims through the water this bulb shines like phosphorus, and fish are attracted by it, and are engulfed in the mouth of the angler.

Some animals have fangs with which they protect themselves, as the snakes and bees have stings, but other animals do not possess these properties. Nature has made it possible that the animals not possessing a means of defense should mimic another animal that does possess some means. For instance, the Viceroy mimics the Monarch butterfly. The Viceroy is colored exactly like the Monarch, being black and brown, and is just a trifle smaller. The Monarch possesses a very disagreeable taste which the birds do not like and of course it is not molested, but on the other hand the Viceroy does not possess a disagreeable taste, and yet mimics the Monarch. The birds, thereby mistaking the Viceroy for the Monarch, do not harm it.

Now I want to show you three pictures which illustrate protective coloration. These pictures are of female birds on their nests.

Here is a picture of a pheasant on her nest. [Shows picture.] She is colored to resemble the tall grass in which the nest is laid. There are stripes on the top of her back which run parallel with the grasses.

Here is another of a ruffed grouse on her nest. [Shows picture.] If you can see, her head is pointed toward you, and her tail is resting against the bark of the tree, rendering her practically indistinguishable. You will notice that the tail on this bird is colored to resemble the bark on which it is resting, and the breast is much lighter to resemble the color of the leaves on the ground.

Here is a picture of the American Bittern on her nest. [Shows picture.] She is colored with alternate black and white stripes which run parallel with marsh grass.

F. Creative Music Assembly.

An experiment in creative music involves the construction and use of many types of simple instruments. This enables children to experience, in their own lives, the actual evolution of music. The aim of this work is to give each pupil in the grades in which this work is being developed, a chance for musical self-expression upon an instrument suited to his individual capacity and natural tendencies, without expecting him to struggle, in the very beginning, with such difficult modern instruments as the piano and violin. It strives to do away

with forced practice and to let technic come as a result of the personal interest that grows by natural means to make music a simple and easily accessible thing rather than something set apart for the gifted ones; and to use the natural tendency toward musical improvisation.

The program for one of these music assemblies is given; then a few type talks are given as illustrations. This program was given entirely by pupils, and each explanation was followed by a musical demonstration by one or more pupils.

PROGRAM

A. *Percussion Instruments.*

How we made our drums	John (Third Grade)
Bells and metal	Priscilla (Third Grade)
The tubaphone we made	Richard (Third Grade)
Sleigh bells	Tom (Third Grade)
How we make music with drinking glasses	Natalie (Fourth Grade)
How we made our marimbas	John (Fourth Grade)
The minor mode	MacIvaine (Fourth Grade)
Two original minor compositions	Mac and John (Fourth Grade)
An original minor composition	Fourth-Grade Class

B. *Wind Instruments.*

How we made our "Pipes of Pan"	Page (Fifth Grade)	
Song of Spring	}	Played by Fifth-Grade Class
A Beethoven Hymn		
Four inventions of wind instruments	Four Fifth-Grade Pupils	
A Gourd oboe	Page (Fifth Grade)	
A Reed trumpet	David (Fifth Grade)	
Seashell trumpet	William (Sixth Grade)	
Flageolets	Susan (Fifth Grade)	
Flutes	Played by Six Sixth-Grade Pupils	
Ocarina	Thalia and Sixth-Grade Class	

C. *Stringed Instruments.* (All by Sixth-Grade Pupils.)

The simplest stringed instruments	Louise
Tension bow	Therese
Egyptian shoulder harp	Nelson
Curved Theban harp	Bud
Two original harps	Alex and Charles
Chinese kins	Donald
Gourd harps	James

Development of the lyre	James
Our cocoanut banjos	Marion
Four banjo numbers	The Class
Modern banjos	Nelson
A banjo trio with the class singing	The Class

How We Made Our Marimbas Jack

One day we went up to the shop with the teacher and she said, "We are going to make some Marimbas." She gave us each a board like this but only much longer and she had a pattern of the six notes we had to make. She told us to saw them off about the same size as hers so when you struck them they would make the same tone. When they were too low we had to saw them off to make them higher, but when they were too high we had to plane them to make them lower. After that we made the stands for them. We had to find out the nodal point. The way we found that was to put some sawdust on to the bar and strike it and all the sawdust would bounce off to the nodal point, and we fastened the bar to the stand at that point. We will play two tunes.

The Ocarina Thalia

This instrument is an ocarina. It is made of clay and is hollow. It is blown through this mouthpiece. The Chinese used to make them out of eggs covered with clay, then they punched holes through the clay and the egg, and poured the inside of the egg out. We tried it but our clay cracked. Perhaps you have seen boys whistle through their hands cupped up like this. Show them, Robert. [Robert whistled through his hands.] The ocarina is made on that same principle.

These bird notes will be played to be identified by the audience. Notes of the

- Whippoorwill
- Meadow Lark
- White-throated Sparrow
- Field Sparrow
- Robin Redbreast
- Mourning Dove
- Blue Bird
- Brown Thrush
- Nashville Warbler

Our Chinese Kins Donald

The Chinese were probably the first people to use a sounding board. Everybody in the sixth grade made a Chinese kin, and this is the one I made. We made the sounding board first, then we nailed these strips on, for bridges. Then we bored holes in this strip under here for the pegs to go in, then we made the pegs and fitted them in the holes. Then we thought it would be nice to make our own strings, so we made them of different weights, out of twisted silk. We tuned our kins to the Chinese scale, and learned to play some Chinese melodies on them. We also composed melodies on them. The teacher will play some of our original melodies on the piano. If we played them on our kins, not all of you could hear them, as the tone of our kins is so soft.

The Development of the Lyre Tim

Once as Mercury, the god, was walking through the forest he accidentally hit a tortoise shell with his foot. This was an unusual one for as the dead tortoise dried up it left its muscles stretched from one side to the other. Hitting it made the dried skin vibrate. This gave Mercury an idea of how to make a musical instrument, so he took it home and made the first lyre, so they say. Later on people used the skin of some animal stretched across a tortoise shell with a wood frame to which were fastened the strings like this. The difference between a lyre and a Chinese kin is that a lyre has a hollow sound box and a kin has a flat sounding board. Later on a box lyre was used. Some of this kind were used in practically all Asiatic countries and also in Egypt. The best lyre was developed in Greece. They had several types of lyres. The first had only four strings. They say Apollo gave Orpheus a seven-string lyre and later on they had nine strings and eleven strings. All the Greek people loved music very much. I suppose you all know the story of Orpheus and how he played so much and so well that he won his wife back from the under world. Pythagoras was another Grecian who loved music very much. He was a great mathematician. He made the first scale on mathematical principles and this was the foundation of our scale. He also had a Brotherhood of Music where they played practically all day. There are seven different Greek modes: the Lydian, the Frigian, the Dorian, the Hypolydian, the Hypofrigian, the Hypodorian and the Mixolydian. We will play a little Greek tune in all of the seven modes. Marion and Charles will play some original compositions on lyres. Now we will play a Gavotte from an opera with a Greek setting by Gluck.

A Greek Melody in Several Modes Played by Class
Original Melodies in Several Modes. Marion and Charles
A Gavotte from one of Gluck's Operas on lyres. Played by Class

Our Coconut Banjos Marion

Our coconut banjos are made of a hollowed-out coconut and a strong oak board put through the end. We stretched a sheep skin over the hollowed-out coconut and held it together with a net work of string. We made the finger board and glued it on—put a hole underneath the coconut and made holes for the pegs and we stretched the strings from the pegs over the bridge and to the hole underneath the coconut. The way we make different tones is to press on the strings. Pressing makes a higher tone the farther up you go. It is played the way a regular banjo is played.

Jig on the E String }
Yankee Doodle } Played by Class
Class Jig (composed by class) }
"O Susannah"—A Negro Folk Song Sung and Played by Class

Modern Banjos Nelson

There are three different kinds of banjos. This is a minstrel banjo. There is another banjo that is used for jazz and then the mandolin-banjo is used to play with a pick. The modern tenor or jazz banjo is tuned like a cello. This minstrel banjo is the kind that the negroes used to play and it is the appropriate instrument for playing our Southern folk songs.

"My Old Kentucky Home," Sung by Class with Accompaniment Played on Banjos by Nelson, Tim and Charles.

V. A LIST OF HIGH-SCHOOL ASSEMBLY PROGRAMS

The topics for the Assemblies given by the high school during the years 1919-1921 are given in order to illustrate the school's use of assemblies over a consecutive period, and should be consulted to gain an idea of the types and range of topics.

Topics used in high-school assemblies.

"What is there about the Lincoln School that is different from other Schools?" Discussion by pupils.

Presentation of Scout medals and flag (for Boy Scout and Girl Scout troops).

"Roosevelt Day" Program.

Talk on the "Gyroscope," by a visitor.

Commemoration of "Armistice Day."

Talk on "Success," by a visitor.

School Meeting. Songs. Talk on "Writing and Spelling," by the Director.

Mathematics Assembly, Junior High School.

Mathematics Assembly, Senior High School.

Piano recital of Indian music, by a visitor.

Music Rehearsal.

Christmas Music.

Christmas Play—"Ruggles" from "Christmas Carol."

"The People of China," by a visitor.

Reports of Christmas Activities.

The Hampton Singers.

Talk on "Art," by a visitor.

Boy Scout Program.

Lincoln Program.

Talk on "Being Trusted," by the Director.

Talk on "Protective Coloration in Nature," by a visitor.

Play, "Cooks is Cooks," presented by the eleventh grade.

The New York Water System, by the eighth grade.

"Paper Making," by a visitor.

Reports by students in biology.

"The History of Pottery," by pupils from all classes.

Town Meeting.

Talks on "Silver Bay," by pupils from the Silver Bay School.

Modern Language Assembly. A program of folk songs by pupils.

Town Meeting.

66 SOME USES OF SCHOOL ASSEMBLIES

General Science Assembly.

"Colonial Homes," by the eighth grade.

Recital by the Boys' Band.

The National Republican Convention. A mock convention by teachers and pupils.

High-School Closing Exercises.

Four other town meetings were held at which the constitution of the student council was discussed and voted on, and other special assemblies were also held during the year.

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VI. SUMMARY AND DISCUSSION OF AIMS

The kinds, value, and organization of all The Lincoln School assemblies are related to the educational needs of the pupils. We have seen the way subjects are chosen, either to stimulate clear and easy expression, to share interesting information, to transact school business, or to give entertainments of artistic and cultural value. Certain class-room values are kept definitely in mind in the preparation of programs. Assemblies offer opportunities to build up useful habits and attitudes as well as to give social value to information and to artistic expression.

The assembly committees attempt to have the programs representative of all the school interests. Every grade, every department, and every pupil is expected to take part in such a way that the work will be interesting to the whole school. Pupils are not stimulated to prepare artificial and "showy" materials, nor to memorize essays or teachers' expressions and outlines, but rather to understand the subject so that they can make it interesting and valuable to the audience.

Preparation and participation in assemblies is of value to individual pupils in helping them overcome self-consciousness, in developing clear thinking and oral expression. With a little additional quiet planning by the teacher shy children can be given parts in which the fear of appearing before an audience is forgotten in the interest of gathering material, drawing charts, or making a costume. Absorbed in the intellectual side of making his contribution, he goes through the program less conscious of the self that usually tortures him. Realizing that the task was not as bad as he had expected, the child's own efforts to overcome his handicap are usually aroused, and what was a real block to

